

PIRELLI & CO., Milan, Italy,
 GENERAL INDIARUBBER, GUTTA-
 PERCHA AND ASBESTOS INDUSTRY.
 INSULATED WIRES AND CABLES IN EVERY SYSTEM.
 Works at Spezia for the Submarine Cables.
 GREAT EXPORT.
 GRAND-PRIX at the Paris Exposition, 1900.

The BEST BUCKLES for ARCTICS
 ARE MADE BY
 THE WELD MFG. CO.,
 41 Lincoln Street, - - Boston.

"Cravenette"
 RAIN COATS

Must have this Circular
 Trade Mark stamped in
 inside of coat.....



INDIA RUBBER WORLD

CAOUTCHOUC
 HEVEA BRASILIENSIS

GUTTA-PERCHA

Edited by HENRY C. PEARSON—Offices, No. 150 Nassau Street, NEW YORK.

Vol. XXV. No. 1.

OCTOBER 1, 1901.

35 Cents a Copy.
 \$8.00 Per Year.

THE ALDEN RUBBER CO., BARBERTON RUBBER WORKS, MANUFACTURERS OF RUBBER GOODS.

BICYCLE
 AND
 VEHICLE
 TIRES,
 HOSE,
 PACKING,
 VALVES.



MOLDED
 GOODS,
 FRUIT JAR
 RINGS.
 WHITE
 TUBING
 A SPECIALTY.

THIS TRADE MARK GUARANTEES FULL VALUE.

AKRON, OHIO and BARBERTON, OHIO, U.S.A.
 165 Lake Street, Chicago, Ill.

Akron Office, Arcade Block—Main Office and Works at Barberton.
 LONG DISTANCE TEL., AKRON EXCHANGE NO. 999.

CABLE ADDRESS—"ARCO AKRON."

GENERAL SALES AGENTS:

JOHN H. GRAHAM & CO., 113 Chambers and 95 Reade Sts., New York.
 P. O. Box 1042. Cable Address, "GRAHAINES."
 Cable Codes—Lieber's, A. B. C. 4th Edition, Western Union.

Mention The India Rubber World when you write.

LAMPBLACKS especially for RUBBER MANUFACTURE.
 SAMUEL CABOT, BOSTON, MASS.

CHLORIDE OF SULPHUR
 AND
 BISULPHIDE
 OF CARBON.
 GEO. W.

SPEIGHT,

106 Fulton
 St., N. Y.

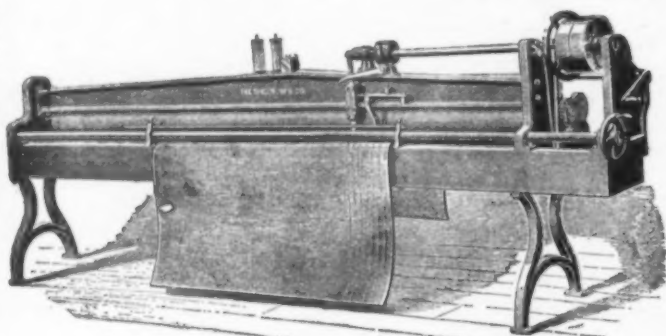
BOUGHT AND SOLD.
 J. H. STEDMAN & CO.,
 200 SUMMER ST.,
 BOSTON, MASS.

For Stitching Rubber Belting

HIGHEST AWARD AT COLUMBIAN EXPOSITION.

Machine No. 9-1: For Stitching Parallel Rows on Canvas or Rubber Belting.

POINTS OF EXCELLENCE.



- 1.—Two needles and two oscillating shuttles for forming two parallel lock-stitch seams in heavy canvas and rubber belting up to 100 inches wide and one and one-half inches thick.
- 2.—Powerful feed-rolls 16 feet long, capable of carrying material of several tons' weight, have a bearing the entire width of the material, thus ensuring uniformity and regularity in carrying forward the several thicknesses and giving elasticity to the stitching.
- 3.—The mechanical arrangement for raising and lowering the upper feed roller by means of a horizontal shaft extending the entire length of the machine, connected with the hinged bearings of the roller by bevel gears at each end and so operated as to be easily adjusted to any thickness of material.
- 4.—Largest and strongest sewing machine ever constructed, having a bed eighteen feet in length, with overhanging arm supported by and attached to both ends of the bed.

Machines shown in practical operation at

561-563 BROADWAY, NEW YORK.

1210 CHESTNUT ST., PHILADELPHIA.

192-194 VAN BUREN ST., CHICAGO.

128-132 ESSEX ST., BOSTON.

THE SINGER MANUFACTURING CO.

Salesrooms in Every City.

Mention The India Rubber World when you write.

100% A YEAR

That's the rate at which our business is increasing. Last year we doubled our plant and our output over the year before. This year we are doubling again.

Our specialty is making goods that are a little bit better in wearing qualities and retaining finish than you can buy elsewhere.

If you are in the trade it would be a pleasure to us to submit you samples of our fine

RUBBER CARRIAGE CLOTHS

YOUR ORDERS WILL BE FILLED CAREFULLY AND PROMPTLY

CABLE RUBBER CO. BOSTON, MASS.

Mention The India Rubber World when you write.

RECLAIMED RUBBER

Mechanical and Chemical.

DANVERSPORT RUBBER COMPANY,

Office, 239-241 A St., Boston, Mass.

Mills, DANVERSPORT, Mass.

W. J. CORBETT, Pres't. and Treas.

J. C. WALTON, Secretary.

Address all communications to Boston office.

Mention The India Rubber World when you write.



Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.

No. 150 NASSAU ST., NEW YORK.

HENRY C. PEARSON,
EDITOR.HAWTHORNE HILL,
ASSOCIATE.

Vol. 25.

OCTOBER 1, 1901.

No. 5.

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and Canada. Foreign countries, same price. Special Rates for Clubs of five, ten or more subscribers.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank draft, Post Office Order, or Express Money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Post order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

Entered at New York Post Office as mail matter of the second-class.

TABLE OF CONTENTS.

	PAGE.
Editorial:	
The Tragedy at Buffalo	1
The Exhaustion of Rubber	1
Why Not Assist Nature?	2
Minor Editorial	2
Rubber Planting in Costa Rica	3
Mr. Flint on the Rubber Combinations.....	5
[Preferred Stock and Common Stock. Economies Effected by Industrial Combinations. Limits to the Possibility of Combining Industries. The Tariff. Export Trade. Prices of Rubber.]	
The Waste of Rubber Resources.....	8
[With Two Illustrations.]	
Yield of the Para Rubber Tree	10
The India-Rubber Trade in Great Britain	11
[Waterproof Garment Trade. Motor Tire Interests. Uses of Balata. British Trade Combinations. Government Inspection of Factories. Community of Interests. Frue Vanner. Railway Rubber Supplies.]	
Gutta-Percha Culture in Java.....	13
Rubber Planting Interests	14
Some Wants of the Rubber Trade	15
New Trade Publications.....	16
Literature of India-Rubber.....	16
Recent Rubber Patents (American and English).....	19
Miscellaneous:	
Rubber and the State in Brazil	4
Is This Why Rubber is Lower?	4
Rainy Day Skirts and Mackintoshes	4
The Rubber Factory for Turkey.....	4
Rubber Consumption in Canada.....	7
The Bolivian Company.....	10
The First India-Rubber Raft.....	12
Rubber Prices in Germany.....	15
"Pacific Rubber Co.".....	15
Rubber Notes from Europe.....	16
One Conge Rubber Trading Company.....	16
A Question for the Curious	16
New German Rubber Tariff.....	17
Rubber Consumption in Russia	17
Rubber Secrets Will Out.....	17
Exports of American Rubber Goods.....	17
Mineral Rubber in Brake Blocks.....	18
Obituary Notes	22
New Goods and Specialties in Rubber (Illustrated).....	21
[Rubber Floor Tile. India-Rubber Insulating Gloves. Gorrien's Portable Shower Bath.]	
News of the American Rubber Trade.....	23
Review of the Crude Rubber Market	25

THE TRAGEDY AT BUFFALO.

THE recent tragic death at Buffalo of the President of the United States, William McKinley, led to universal and merited regret, at the cutting down in the prime of life of a man so admirable in his personal qualities and relations, and the loss to the country of a chief executive so honorable and capable. But in view of the many notable tributes to these characteristics that have appeared, not only in America, but wherever in foreign lands the conditions were known and appreciated, a trade journal, such as THE INDIA RUBBER WORLD, may confine its comments to the effect upon business conditions of the tragedy. Rather, it may be said, no effect has been observable, beyond the general cessation of business while the whole people paid tribute to the dead.

There have been times when such an occurrence might have precipitated a panic, and seriously upset that general confidence which is the basis of trade. The fact that nothing of the kind has now occurred is the strongest possible evidence of the prosperity of the country. In so-called panics there is, of course, no change in real values of what constitutes wealth; but when prices are inflated, and men measure their possessions by fictitious values, a mere trifle may start a puncturing of bubbles and end in unsettling all bases of credit and giving a check to legitimate enterprise. To-day, business in the United States shows no change from the conditions on the day before the assassination. There was no opportunity for precipitating a crash in the stock markets, such as some speculative interests always welcome, in the hope of being able to profit from the collapse of unstable fortunes. The one change noticeable is the filling of the vacancy at the head of the nation by the man chosen in advance for such an emergency, and in whom the public apparently have full confidence. Here is political as well as business stability—a combination upon which the American people may well be congratulated.

The recognition which the death of Mr. McKinley has received abroad—exceeding that accorded to any purely domestic event in this country at any past time—is most significant. The meaning is that the United States to-day presents a larger figure to the eyes of the world than ever before; that the industrial and commercial strength of the nation, of which our people long had been becoming conscious, is now everywhere recognized. This is, in a manner, another evidence of the soundness of business conditions here. It was the late President's good fortune that this widening sense of the importance of the country developed in a striking way during his administration, and history doubtless will mete out to him no small credit for its development.

THE EXHAUSTION OF RUBBER.

THOSE of our readers who have kept up with THE INDIA RUBBER WORLD from the beginning may recall that in not a few issues have appeared articles writ-

ten to combat the idea that an exhaustion of supplies was in prospect. Some of these have been intended to discourage movements to invest in rubber exploitation schemes having an unsound basis, and which appealed for support on the idea that all natural rubber resources were near an end. And there have been articles meant to allay any present fears on the part of manufacturers that rubber was about to be "cornered," by pointing out how wonderfully wide is the natural rubber zone. Again, we have given prominence to discoveries of hitherto unknown rubber forests, as indicating a prospect of lower rubber prices, at times when manufacturers were fearful of a rise.

In a word, our idea has been to discourage any alarmist ideas with regard to the supplies of rubber, at least within our own generation. We may mention, by the way, that since THE INDIA RUBBER WORLD was first issued, the Congo rubber supply has been developed, and the large output from the Gold Coast, Lagos, and other African districts, besides the growth of the Caucho supply in South America, and the discovery of rubber in immense quantities in Bolivia. But the rate at which many of these sources of supply have begun already to diminish, and fuller information regarding the wasteful practices indulged by rubber gatherers, and the inability of governments to restrain them, make it proper, in some measure, to take fresh bearings on the subject.

Not that we are ready yet to take any alarmist position. There still appears to be enough rubber in sight for all purposes for many years to come. With better transportation facilities and better organized systems of operation, the more remote districts become gradually, in effect, less remote, and rubber now reaches New York and Liverpool from points whence it could not have been brought, twenty years ago, except at prohibitive prices, even if the existence of the rubber had been known. There is yet no need for any rubber manufacturer to cast about for a new occupation, lest he should suddenly find himself without rubber for carrying on his business. And we fancy that no one in the trade will lose sleep over what the next generation will do for rubber.

At the same time, the rubber is diminishing. An impressive object lesson is given on another page of this paper, in the form of a diagram illustrating the rise and decline of rubber production in Colombia, and a similar diagram might be prepared for several other countries. In time, under existing conditions, one could be prepared for every rubber producing country, excepting, perhaps, the Pará rubber districts. The reason is further illustrated by a cut, made from a photograph of a felled tree. It will not yield gum a second time.

We believe that disaster to the industry will be avoided, ultimately, by the cultivation of rubber. Not that every scheme proposed in this field should be encouraged. Many of them should be vigorously discouraged, just as has been true in respect to orange growing, gold mining, and other interests requiring large amounts of capital for their development, giving incapable or dishonest promoters an opportunity to profit at the expense of uninformed investors.

In THE INDIA RUBBER WORLD of April 15, 1890, an editorial article on "The Cultivation of Rubber" expressed some views to which we still hold, after nearly twelve years, for which reason these extracts from it are presented:

Great as the use of rubber has become, it is little more than a beginning. Every year the number of consumers of rubber increases, while busy inventors continue to find new uses for it. But the supply of rubber does not grow in like degree. . . . The culture of rubber will soon be a live question. Plantations of rubber near shipping ports and under intelligent supervision are needed. . . . The great trouble is that the time required for the first returns from the rubber tree is greater than most farmers would find practicable. The work would have to be done, therefore, by organized capital. . . . We call attention to this subject as one of interest, not only to the rubber trade, but possibly to some American capitalist who may see the importance of being a pioneer in the business of supplying the world with cultivated rubber.

WHY NOT ASSIST NATURE?

THE time was when nature did its own seed sowing, and did it fairly well. It was not, however, until man became nature's assistant that the necessities and luxuries that come from the vegetable world were planted and harvested with any degree of system or success. We are apt to forget that the commonest food products once grew wild, but when the need arose, man stepped in, and not only increased the product a thousand fold, but in almost every instance brought fruitage up to a far higher plane of production and protection. No doubt the time was, when the conservative capitalist of the stone age predicted the utter failure of the enthusiast who planned to cultivate wheat. His mantle seems to-day to have fallen upon the persistent pessimist who is equally certain that India-rubber cannot be cultivated. There is little doubt, however, that some day cultivated rubber will displace the wild.

CRUDE RUBBER STEALING.—In another column appears a note that should interest every rubber importer and manufacturer in the world. It relates to the stealing of a large amount of rubber from an importer and the sale of the same in small quantities to the very house which owned the goods. It is freely granted, that it is very rare that so large an amount is stolen. It is also well known, that small amounts of rubber are often stolen and sold. Nor is this remarkable. India-rubber is an exceedingly valuable and portable product, and will always be a temptation to the dishonest. It should, therefore, be guarded as carefully as the mint guards its gold, and any seller should be obliged to show a clear title to its possession.

RUBBER IMPORTS AT ANTWERP during the past month included one cargo by steamer from the Congo of 1,783,540 pounds. The receipts of Congo sorts had previously amounted, for the year, to 7,725,291 pounds. This volume of trade, built up only in a few years, is a most notable development in rubber, and particularly the large single shipment here recorded. If this sort of thing can be kept up, the annexation of the Congo Free State will prove a good thing for Belgium, but there is no assurance that a decline in the Congo rubber production is not near at hand.

RUBBER PLANTING IN COSTA RICA.

By Th. F. Koschny, (San Carlos.)

TO THE EDITOR OF THE INDIA RUBBER WORLD: In respect to tenacity of life and the quantity of its yield, the *Castilloa elastica* has no equal among other rubber producing plants. Moreover, when the tensile quality of its product is taken into account, and the low degree of shrinkage, its value, as compared with Pará rubber, is much higher than is generally supposed.

The *Castilloa* requires a warm and moist climate. A temperature never less than 60° F. and an elevation not over 1200 feet above the sea are desirable. There are exceptionally well protected places where it will thrive at an elevation of 1500 feet. Native trees are found most abundantly, and in the best state of development, at between 500 and 1000 feet. Near the sea, where the air is impregnated with salt, the trees will not thrive. The annual rainfall should not be less than 80 inches; the more the better. In the valley of San Carlos, in Costa Rica, I found the greatest abundance of native rubber when I traveled extensively in Central America in 1870; this has an annual rainfall of 160 inches. Not only is plenty of rain desirable, but it should be well distributed throughout the year. San Carlos, for instance, has, in the two driest months, March and April, 2 and 4 inches of rainfall, respectively. The Pacific slope of Central America, with its decidedly dry season of six months, is, save in a few favored localities, not adapted for rubber planting. In its native state the *Castilloa* favors a clay soil and this soil predominates on the Atlantic slope. I have never seen well developed rubber trees on a sandy soil.

The *Castilloa elastica* seeds ripen from March to June. The fruit resembles a pea 3 or 4 inches in diameter, with an outer green plate, and consists of a very soft red pulp, in which the seed is imbedded. Each fruit contains from 8 to 15 seeds the size of a pea. At first they will weigh 1000 to the pound; by the third day they weigh 1500 to the pound. They must be kept moist until planted. They may be planted in nursery beds, or where the trees are intended to stand. The price in San Carlos is \$2, gold, for 1000 seeds.

Land for planting should be inclined, to allow for drainage. Swamps or very level lands, on which the water stands, are unsuitable. Hillsides too steep for other cultivation, might be utilized for rubber. The *Castilloa elastica* is a shade tree, and any other culture than that which is suited to this characteristic will prove a failure. It will grow in the open until about the sixth year, when the top begins to dry off and shoots start up from the lower stump to protect the trunk. It is the stem of the tree that needs protection from the sun's rays. Trees not protected will always perish from the first attempt to extract rubber. I have lost thousands of trees at the first tapping for this reason. Four years ago I planted a few acres in the forest, cutting out the larger trees, where the shade was densest, and setting out the rubber in rows. The young rubber trees are now 25 feet high and 5 inches in diameter three feet above the ground. While the rubber tree is so delicate in the open field, it is quite the reverse in the forest. I have trees planted in the forest shade that are covered with scars from tapping, but are yet vigorous enough to yield seeds. The *Castilloa* is seldom found wild in dense forests of high trees, but in places where high trees are interspersed with lower ones, or with high brush, in such a way that during some part of the day the sun can reach the rubber foliage. These same obser-

vations, by the way, were made by the German botanist, Rudolf Schlechter, with the *Kickxia Africana*, in the colony of Lagos, West Africa.

In planting rubber by my method, rows or paths are cut in the forest, two yards wide and three yards from center to center. In these rows the seeds are planted, without preparation of the soil, about six yards distant. At the selected spots two small holes are made, about six inches apart, and in each one rubber seed deposited and covered with an inch of soil. In case both seeds grow, one plant may be set out elsewhere. If the ground should be cleaned thoroughly, lizards would be more apt to cut off the green shoots as soon as they appeared. After they are eight inches high, the ground may be cleaned around the plants. The rubber grows better when planted in its permanent location, for transplanting means a check to the growth for a month or two. The seedlings should be watered in dry weather. But if nursery seedlings are used, care should be taken, in transplanting, that the tap root of the plant goes down in the ground, instead of being doubled up. The spot where each seed or seedling is planted should be marked with a stake a yard and a half high. As soon as the plants are up, and any necessary replanting has been done, the work of thinning out the forest may be taken up, with a view to leaving only so much shade finally that, during some part of every day, the sun may reach every rubber plant.

The *Castilloa* may also be planted in open ground, but without cutting down weeds or young trees sprouting in the spaces between the rubber plants. These, in the tropics, in a few years form a forest growth sufficient to shade the rubber; if too dense, it must of course be thinned out. This method of planting rubber has an advantage in that it forms stronger plants at first, but it is more expensive in the end, because for the first two years six heavy cleanings per year are necessary, and later the free space must be thinned out every year. With forest planting, however, only three slight cleanings are needed the first year—cutting the sprouts of the underbrush and cleaning the ground about the rubber plants in spaces one yard in diameter, such as one man can accomplish for one acre per day. For the next three years only two annual cleanings are needed, and for the next three years, only one annually. In the eighth year the *Castilloa* becomes productive, after which the only work in cleaning is to tear the climbing vines away from the trees to allow the rubber to be extracted.

The average yield of rubber per tree in the eighth year should not exceed 1 pound of dry rubber per tree, to avoid injury to the tree. The development of all trees in a large plantation will not be the same, and some can stand heavier tapping than others. In the tenth year the yield should be 1¼ pounds; in the twelfth year, 1½ pound, and after the fifteenth year, 2 pounds per year. This is not a calculation of what the trees will yield, but the limit of annual yield without injury to the health of the tree.

As for expense of planting in Costa Rica, an estimate may be based on 100 hectares (=247 acres). The cost for eight years will be, allowing 50 per cent. for extras over the figures that my own experiences point to, for 25,600 trees, \$5300, gold. This includes the cost of the first year's tapping. The yield this year, at 1 pound per tree, will be 25,600 pounds, worth, at 85 cents per pound, \$21,680, gold.

RUBBER AND THE STATE IN BRAZIL.

THE *Bulletin de la Société d'Etudes Coloniales* (Brussels) recently published the results of an official inquiry made under the direction of the Belgian ministry of foreign affairs as to the official measures taken in Brazil to foster its great rubber industry. It was found that the general government of the republic has passed no laws relating to the industry. It is not regulated at all except so far as the legislatures of the several states have adopted measures. Seventeen of the twenty states produce rubber, the climate being unfavorable to rubber culture only in the three southern states of Rio Grande do Sul, Santa Catharina, and Parana. Most of the small Atlantic coast states in the rubber zone, though producing more or less caoutchouc, have made no attempt, as yet, to conserve their rubber resources or to encourage or regulate its production. These states include Rio de Janeiro, Minas Geraes, Espirito Santo, Parahyba, Rio Grande do Norte, Sergipe, and Ceará. Most of the rubber states make the product contribute to the finances by imposing a tax on rubber exports, but the states above mentioned have not given even this attention to the industry except Minas Geraes, which collects an export duty of 4 per cent. *ad valorem*. In these seven states the first comer may harvest the crop wherever he may find it on the public domain.

On the other hand, the state of Pará, from which by far the largest shipments are made, encourages the planting of caoutchouc by offering a premium of 1,000,000 reis, or over \$500 for every 2000 trees that are properly planted. This law, which has been in force only four years, is already stimulating the development of rubber plantations and its wisdom is being conclusively demonstrated. This large state, which embraces all the lower part of the Amazon and some of its mightiest tributaries, will not have to rely, in the coming years, upon supplies that grow wild in the forests; in fact, no source of rubber so freely tapped as that in Pará can be relied upon indefinitely to yield an unfailing supply. The days of exhaustion will come just as they have overtaken the rubber vines of West Africa, which have all been killed for many miles inland from the coast. The only way to supply the future demand will be to increase the quantity, and that can be done only by rubber planting, which, in a few decades, will revolutionize the business. The world now depends almost solely upon the wild sources of supply, but there will be a great deal of plantation rubber in the market before the century now beginning is very far advanced.

The state of São Paulo also offers a handsome premium for the development of rubber plantations; and both these states impose a comparatively heavy tax upon the exports of rubber with the wise intention of devoting a considerable part of the receipts to the conservation and encouragement of the industry. Matto Grosso, under the law of 1898, offers special facilities for the acquirement of a fixed quantity of rubber lands by those who discover them in the vast part of the public domain that is still unexplored. Amazonas and Bahia are not yet offering special inducements for rubber planting, but the land laws, adopted by these states in 1897, facilitate private ownership in rubber forests and this is a long step toward establishing the industry on a stable basis.

All these improvements in the status of the rubber industry of Brazil have been made within the past four years. They encourage the belief that this great source of wealth will come, more and more, to be managed scientifically in the interest of Brazil and of the world and to the great advantage of the investors of capital.

IS THIS WHY RUBBER IS LOWER?

THE Amazon rubber country just now is a fruitful field for news and rumors of all sorts respecting not only the rubber situation, but the condition of general business as well. Here is a sample of unverified "news" which has traveled as far as New York: "The lower prices for rubber which have prevailed for some time past on the Amazon have been due to manipulation by European capitalists. The state of Amazonas (capital, Manáos) is trying to float a loan in Europe. The capitalists with whom they are negotiating are interested in a low scale of prices for rubber, for this reason: The revenue of the state, on which the lenders must depend for their interest, and ultimately for their principal, is derived from export duties—chiefly from rubber exports. In making the loan, the European capitalists will figure upon the rates for rubber prevailing at the time, and it is to their interest to have rubber prices so low that they can hardly fall lower during the life of the loan, or, in other words, so low that the revenue from export duties—a certain percentage on the price of rubber—will not be apt to decline before the loan is paid. The money lenders have played their game by influencing certain European bankers to curtail their accommodations to Manáos rubber houses, and this in turn has made funds scarcer up the Amazon. The point of this is that the handling of rubber is checked by the lack of currency, and this operates also to reduce prices." Clearly the only way in which rubber prices may ever be regulated is by control of the production by large capital, under intelligent supervision.

RAINY DAY SKIRTS AND MACKINTOSHES.

THE New York *Sun* says: "The rainy-day skirt has almost entirely done away with the feminine waterproof or mackintosh cloak which a few years ago occupied a place in every woman's wardrobe. These garments were made up most expensively in silk and rubber-mixed materials, many of them being beautiful in color and finish.

"While they looked extremely pretty on damp days, they were never a healthful garment, for the rubber material excluded the air and made the clothing damp. Then the difficulty of raising the dress skirt was increased and the rubber cloak invariably trailed in the mud and became unsightly.

"Nowadays a woman dressed for a journey in the rain is sensibly clad, from her heavy cork-soled shoes, which have done away with the clumsy and objectionable overshoe, to her neat, tightly fastened hat, made to withstand the elements.

"Many women venture out in these waterproof suits without an umbrella, but the umbrella gives a finish to the trim costume. On rainy days, and even on fine days when these costumes are worn, the hair should be plainly brushed and neatly coiled or braided. An elaborate coiffure or loosely arranged hair is incongruous with these gowns which suggest exercise in the air."

THE RUBBER FACTORY FOR TURKEY.

THE INDIA RUBBER WORLD nous apprend que le gouvernement ottoman vient d'accorder un monopole pour l'installation d'une manufacture à caoutchouc en Turquie. Le monopole en question comporte l'exemption de droits d'entrée pour le matériel et pour la matière première. La compagnie concessionnaire est assurée, déclarée THE INDIA RUBBER WORLD, d'obtenir les commandes de goloques et d'imperméables pour l'armée.—*La Gazette Coloniale* (Brussels).

MR. FLINT ON THE RUBBER COMBINATIONS.

THE testimony of Mr. Charles R. Flint, in relation to trusts and industrial combinations, given some time ago before the United States Industrial Commission, which is conducting a series of inquiries by direction of Congress, appears in full in the latest volume issued by the commission. Mr. Flint, during the two days devoted to his examination, was questioned in regard to the methods of organization and conduct of several large industrial combinations with which he is or has been connected, but he was regarded by the commission particularly as representing the rubber industry, and much of his testimony bears upon the United States Rubber Co. and the Rubber Goods Manufacturing Co. In connection with his statements appear some documents of interest, as representing the work of combining the rubber companies involved, preliminary to the filing of articles of incorporation. Below are given several excerpts from Mr. Flint's testimony, sometimes in his own words, and in other cases in summarized form:

PREFERRED STOCK AND COMMON STOCK.

In forming the two rubber corporations above mentioned the same plan was observed in the apportionment of the capital stock, as between "preferred" and "common." Account was taken of the appraised value of (1) plant, machinery, tools, and fixtures; (2) merchandise, raw, wrought, and in process; (3) manufactured goods; and (4) receivables guaranteed by the vendors. From the total values were deducted the liabilities, if any, and preferred stock was issued for the net result. In other words, the preferred stock represented tangible assets. In case only a portion of the whole interest in any manufacturing property was acquired, a *pro rata* amount of preferred stock was issued therefor.

"Common stock was issued to represent the value of good will, patents, and trade marks; and patents are of very great value," said Mr. Flint, in referring to the Rubber Goods company. The original memorandum of agreement of the United States Rubber Co. stated: "The common stock shall be issued, among other things, to represent the increased earning capacity by reason of the consolidation of the interests acquired."

The amount of common stock issued by the Rubber Goods company was proportionately larger than in the case of the United States company. Mr. Flint remarked: "In the case of the United States Rubber Co. it was provided that the amount of common stock should be substantially equal to the issue of preferred, but the United States Rubber Co. had comparatively few patents; and while their trade marks are of great value, the trade mark on a shoe is not as valuable as a trade mark on a tire, because you can get home with a leaky shoe, and you can't with a punctured tire."

Referring again to the value of patents, Mr. Flint said: "The Rubber Goods Manufacturing Co. manufactures ten different classes of rubber goods. In some cases, being protected by a monopoly under a government patent, they have 100 per cent. of the business. - - - They have patents in certain kinds of tiling—interlocking tiling—and also on certain kinds of tires. In other lines they manufacture only from 25 to 75 per cent."

The American Chiclé Co., which Mr. Flint also helped to organize, was discussed at some length. In that case, the preferred stock was \$3,000,000 and the common stock \$6,000,000. Mr. Flint said: "There was not a formal appraisal, from the fact that the main item of value was the earning capacity.

- - - The preferred stock in round figures was three times the amount of tangible assets. - - - It has been shown that the capitalization of the American Chiclé Co. was on a conservative basis from the fact that the company has paid 8 per cent. on its common stock, and the market price of the common stock, which is to a large extent an indication of its character (as in this instance it is not subject to manipulation), is \$80 per share."

Mr. Flint thought that, taking the field of industrial combination as a whole, "there have been many cases of overcapitalization that have been very prejudicial," pointing to "the wisdom of greater care in bringing about these organizations. Speaking generally as regards the capitalization of these industries, it seems to me that care should be taken to protect the senior securities, which are regarded as investment securities. The common stock, though its amount may appear large, is well known as a rule to represent good will. The word 'common' is engraved in big letters across the face of it, and people in general have noticed that it is not as a rule investment security at this time. I have no question but that in time many of these industrial securities—many common stocks to-day might be classed as speculative securities,—will become investment securities, as our railroad shares that were originally issued for good will are to-day. In general I have no doubt that the public have been benefited by these capitalizations. They are, in my judgment, receiving double the income that they would get if these industrial securities had not been created. Formerly the great manufacturing interests were in a few hands, and to day there has been a wide distribution."

ECONOMIES EFFECTED BY INDUSTRIAL COMBINATIONS.

QUESTIONED on this point, Mr. Flint said: "In general, centralized manufacture permits the largest use of special machinery. - - - For example, in the case of the manufacture of rubber goods, an important branch of the business is the production of what is called the reclaimed rubber. Instead of the rubber being reclaimed in each factory or at the principal factories, that business has been centralized in one factory, and the percentage of the cost of reclaimed rubber has thereby been reduced about 20 per cent. "[Mr. Flint was asked whether this applied to both rubber companies, and replied:] "Yes; but to a larger extent to the United States Rubber Co., which has a reclaiming plant at Naugatuck."

Mr. Flint said on another point: "In recent calculations we have found that the percentage saved in the cost of production by running a factory full time instead of half time is from 4 to 8 per cent," and he thought that centralization of industries had led to the more regular running of factories.

Economies had also resulted from making direct sales—direct distribution.

Q. In the case of these companies that you have been speaking of, has there been any material saving by reducing the number of traveling salesmen?—A. Yes.

Q. In which companies?—A. Well, in most cases there has been considerable saving, and in some cases, perhaps they have gone a little too far in that direction. That is, they have undertaken to secure too great economies and have thereby reduced the efficiency of the selling department.

Q. And reduced the sales in proportion?—A. Reduced the sales.

Q. Can you give us any more definite data with reference to the number of traveling men whose services have been dispensed with in the

United States Rubber Co. and the Rubber Goods Manufacturing Co.—A. In the case of the United States Rubber Co. there has been a saving of 25 per cent. In the case of the Rubber Goods Manufacturing Co. the saving has been less, from the fact that the policy which has prevailed in the management of that company has been to sustain the individuality and independence of each concern, believing that in that way a higher efficiency would be secured in the selling branch of the business. Although the latter method has been more expensive, experience has proved that it has been of advantage to the company not to attempt to secure the last economy.

Mr. Flint mentioned as other benefits of combination that production had been better regulated, to meet the actual demands of the trade, thus avoiding overproduction and demoralization of the market. There had also been economies in the shipment of goods in large volume to storage houses in the West.

Asked in relation to economies in the purchase of raw materials, Mr. Flint replied:

As a rule there is not much saving to be secured in the purchase of staple merchandise. In some cases the large consolidations are at a disadvantage, owing to the fact that they are such large buyers. In general, I should say that some economies can be secured by them, but these would not be important unless the combination should use a very large percentage of that particular kind of raw material anywhere produced. In considering the raw material market, it is necessary to include in your calculations all the raw material in the world, owing to the present facilities for quick transportation. Raw material in London is as available as if it were around the corner; therefore, unless an industry uses a large percentage of the raw material that is produced in the world at large, no important advantage can be obtained.

Mr. Flint said on another point: "Last year the United States Rubber Co., doing a business of about \$25,000,000, lost less than \$1000 by bad debts. - - - I think that the loss by separate companies would have averaged on a business of that volume over \$100,000 a year."

The interchange of secret processes among all the factories was mentioned as one advantage of combination.

Q. In case of the manufacture of rubber, are there secret processes of manufacture that are of any value?—A. Yes; there are secret processes, and the issue of common stock would represent the value of those processes.

Q. Take, for example, twenty rubber plants. How many secret processes do you suppose there would be, possessing any market value which some of those concerns would have and others not?—A. No concern would be manufacturing under exactly the same processes, but the manufacturing of rubber is something that might be likened to cooking, and in many cases it is dangerous to dictate to your cook as to how she shall mix the dough. It is not possible in the manufacture of rubber to dictate to all the companies the accurate methods that you would in the manufacture of metals, but substantial advantages have been gained by the general adoption of processes that heretofore have only been used in one factory.

Mr. Flint mentioned one other benefit to the rubber shoe industry from combination: "In going through the depression to which one of you has referred, from 1893 to 1897, although the volume of business fell off very materially, our factories were left running and our help was regularly employed during all that period, and at the same time our stockholders received a fair return on the reduced volume of business. There were no failures, although I would state that if it had not been for the fact of the combination I am satisfied there would have been three or four important failures in the industry."

SOME GENERAL CONSIDERATIONS.

"In general, I think that a centralized management is the most desirable, if there are men of sufficient intellectual ability

to administer an extended business. It is difficult to find a man of sufficient ability to run one large business, and there are not a great many intellectual giants that have the ability to run ten or more large businesses. In my judgment, one of the dangers to the success of industrials is that parties, without being intellectual giants, are liable to attempt to centralize too much. Taking men as they are, I think that in businesses where high class ability is required at many places, and where the business is not of such a character that its conduct can be reduced to rules, and where its success depends on local ability and local judgment, and where the efficiency of the selling department is involved with long time personal relations, such a business it may be very dangerous to suddenly centralize.

"It is far wiser, I think, in a case of this kind, to sustain the independence and individuality of the separate concerns. In that way you have the advantage of the organizations that have created those concerns, and by an adjustment of compensation, based somewhat upon the earnings of those individual concerns, you sustain the individual interest that is essential to success. At the same time your central organization has the advantages of comparative accounting and comparative administration, and is able to hold the separate concerns to a strict accountability, or, by appealing to their pride, to promote a healthy spirit of rivalry. In many cases it is my judgment that this idea of centralization can be carried too far, and that it is often much better to have these concerns run independently. Now, it may be said that you do not get the full benefits of centralization. That is very true. But, on the other hand, I believe you get a more efficient management than you would by centralization. Under that plan, through a system of comparative accounting, you are enabled to measure the different managements, and you can go a long way toward bringing the standard of all up to the standard of the best, and in case of any great situation arising—for instance, like the one you have just brought up—it can be better handled. [Reference was made here to the formation of the American Bicycle Co. which was a combination of customers of tires.] An individual concern could not have dealt with that problem successfully. The Rubber Goods Manufacturing Co. were able in the above case to deal with the problem and make an arrangement that was for the common benefit."

Q. You speak of this system of comparative accounting. In your own establishments how frequently do you get reports?—A. Every month.

Q. So that you can compare each one of the separate establishments every month?—A. Yes.

Q. That is true of all the combinations in whose management you are active?—A. Yes, practically true of all of them.

"In most cases I think that the pride which a man, knowing that his work is being compared with others', has in handling his business successfully, together with the incentive given him by reason of an interest in the profits of the business he is managing, keeps up that individual interest that exists where the person possesses a large ownership. But in many cases it does not; the fact of it is, that one of the fundamental difficulties of the management of these corporations lies in the fact that the managers have a smaller percentage of interest in the operations that they are conducting under the plan of an industrial combination than they had when it was an individual property or when they had a large interest in a small corporation.

"That is fundamental. There is no way in which that condition can be changed. My experience has been that the best way to meet that condition is through an accurate system of comparative accounting, and in that accounting it is advisable

not only to compare general results, but to compare details so as to find the cost of different parts of the process. At the same time it is advisable to have the managers interested in the profits of the business. That comes as near as possible to solving the difficulty.

"On the other hand, there are lines of business of such a character that they can be all handled from a central office. Such a business can be reduced to a very accurate system. For example, the manufacture of metals can probably be reduced to a more accurate system than the manufacture of rubber goods, since in the latter there is no way in which you can utilize the chemist to any extent. You cannot lay down any positive rules as to chemical combinations, because those materials are constantly fluctuating, and there is such a great variety of conditions to meet that the business of manufacturing rubber goods must largely depend on local intelligence, and that necessitates high class ability in the local management. In the case of the Rubber Goods Manufacturing Co., the salaries of the chief executive officers are very small as compared with the salaries of local managers. The salaries of the local managers will average three times the salaries paid to the chief officials of the corporation."

Q. That does not hold where the industry is more concentrated, of course?—A. In case of concentration the big salaries are at the top.

In answer to a question regarding a world-wide combination in the rubber industry, Mr. Flint replied:

"I do not think such an idea is practicable. To-day the limit of these combinations is the finding of men of sufficient capacity to handle such an extended business; and I do not think that such a combination is within the range of possibilities. If such a combination existed, and one concern owned all the rubber factories of the world, it would be immaterial as to whether there was a tariff or not so far as that industry was concerned. However, it would be material to the labor interests of the country."

EXPORT TRADE IN RUBBER GOODS.

"THE difficulty with extending the export trade in rubber shoes," said Mr. Flint, "lies in the fact that we are paying in our factories about double the rates of wages that are paid in the foreign factories; and inasmuch as the manufacture of rubber boots and shoes is largely dependent on hand labor, we cannot develop a very large export business on account of that handicap. It is an industry that we have created in the United States, and some of our people established the business in Europe; but as the rates of wages are so much higher in the United States, and as we have no advantage over Europe in securing the raw material, I do not think we are likely to develop a large export trade. In the case of steel and cotton goods we have an advantage, inasmuch as we produce the raw material in the United States; and in those articles the percentage of labor is very much less than the manufacture of rubber shoes."

THE TARIFF AND THE RUBBER INDUSTRY.

Q. You know that Mr. Havemeyer said that the protective tariff is the mother of all trusts. I would like to ask you if that is true in regard to this combination of yours, whether the tariff has enabled you in any way to make a combination?—A. No; the relation of the tariff to the rubber industry has received practically no consideration on the part of rubber manufacturers, except in the case of rubber clothing, which would amount to, say, less than one-half of 1 per cent. of the total industry. Very few rubber manufacturers could tell you what the percentage of the duty is. They have not given it any consideration.

Q. Is it not true that the manufacture of mackintoshes is protected in this country by the tariff?—A. Yes; but there are people who insist on wearing English clothes, and they are supplied by the mackintoshes of London.

Q. Then as the promoter of this combination, you are not able to say whether the tariff is of any benefit to you or not?—A. I could not say. I assume that if the tariff was entirely removed it might be that some parties would take advantage of the lower rates of wages in Europe. In fact, Americans would be very likely to establish factories abroad, utilizing the cheap labor, and then to bring the products into this country. The most important rubber factory in Great Britain, for instance, was established by an American. He took the machinery over there and established the business in Edinburgh. Well, in the event of the tariff's being taken off, I should say that the rubber manufacturers would take advantage of the low priced labor and take American methods to Europe, and combining with their cheap labor, would be able to produce rubber goods cheaper than they could be produced in the United States.

THE PRICE OF CRUDE RUBBER.

"INASMUCH as rubber is produced in countries of comparatively small populations and is used in countries of rapidly increasing populations, and as the uses of rubber are constantly increasing, there has been under the working of the law of supply and demand an increase in the price of crude rubber, although the production of crude rubber increases at the rate of about 6 per cent. per annum. The prices of rubber of the standard grade, which averaged in the seventies about 70 cents a pound averaged in the nineties about 90 cents a pound."

"You think then the combination of rubber interests in the United States has no power in keeping down the price of raw material?"

"So far as they have prevented any great speculative advance in the article. Before the organization of the industrials to which we have referred, the speculators on two occasions advanced the price of rubber about 60 per cent. Since the organization of these industrials these companies and affiliated interests have held sufficiently large stocks of rubber to avoid any radical speculation in the article; but inasmuch as the demand and new uses have gone on so generally, they have not been able to keep down the price of the raw material."

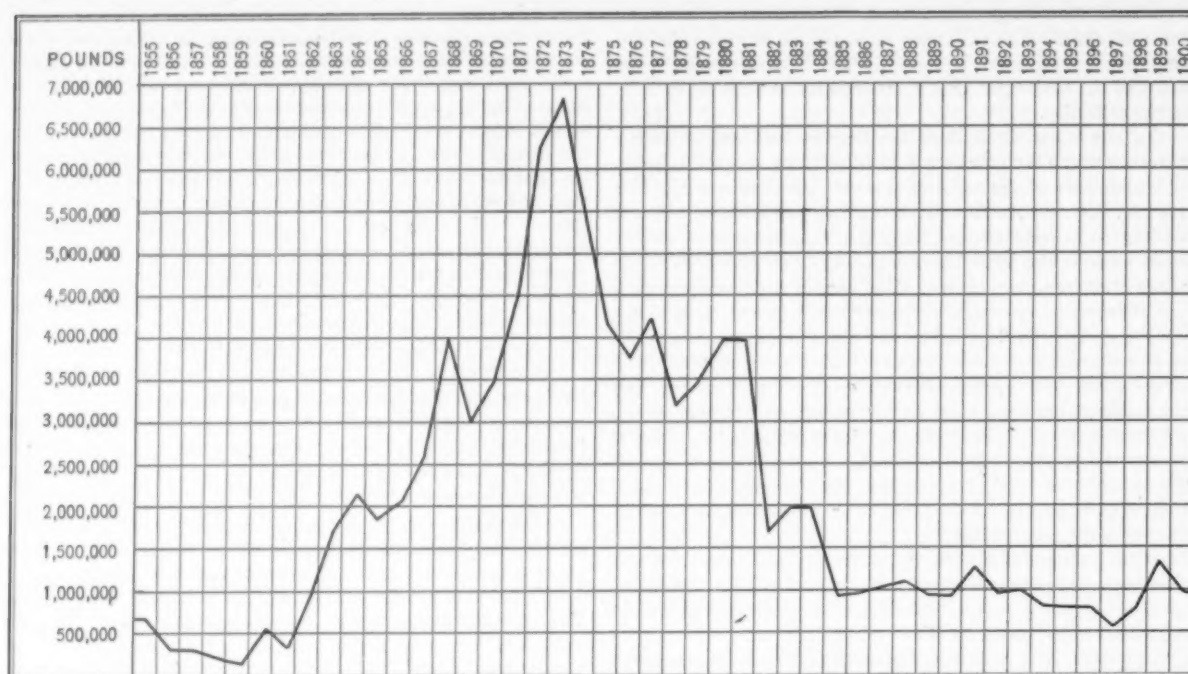
SUBSTITUTES FOR RUBBER.

"I HAVE been in the crude rubber business for twenty-three years. During that twenty-three years no three months have elapsed that some man has not come into my office and presented to me a rubber substitute that could be made for 10 cents a pound, as against the cost of rubber averaging 90 cents a pound. I have investigated every proposed rubber substitute that has been presented to me for the past twenty-three years, and have a laboratory for the purpose of making these investigations at the present time. So far we have not found a rubber substitute. - - - There are parties using so called substitutes for rubber; but the principal value of rubber lies in its elasticity, and so far no substitutes have been found that have any considerable amount of elasticity, and instead of being called substitutes they ought to be called adulterants."

RUBBER CONSUMPTION IN CANADA.

CANADA imported during the fiscal year ended June 30, 1901, a slightly smaller amount of India rubber and allied materials than during the preceding year, the value officially stated being very much smaller. The figures follow:

CLASSIFICATION.	Pounds.	Value.
Gutta percha	19,845	\$ 13,388
India rubber	2,997,017	1,755,480
Rubber recovered; rubber substitute and hard rubber in sheets	1,395,333	179,882
Rubber powdered and rubber waste	512,642	35,854
Total	4,924,837	\$1,984,554
Total, 1899-1900	5,091,780	2,312,399



RISE AND DECLINE OF RUBBER PRODUCTION IN COLOMBIA, SOUTH AMERICA.

THE WASTE OF RUBBER RESOURCES.

THE above diagram is designed to illustrate the rise and decline of the production of crude India-rubber in the United States of Colombia, in South America. The volume of production there at one time was second only to that of Brazil. But this was attained only through the practice of destroying the rubber trees, whereby the immediate yield was larger than if the trees had been merely tapped for their *latex* and allowed to stand for future use. Consequently wide districts, naturally rich in rubber, soon became wholly exhausted, and have since remained so. In some districts, it is true, attempts were made by the authorities to prohibit the felling of the trees, whereupon the Indians tapped them excessively, with the same result—the speedy death of the tree. For awhile the total output from Colombia was maintained at a high figure, through the activity of the *caucheros* in penetrating new regions, but wherever they worked the same wasteful practices were followed, and when the inevitable decline of production began, it was rapid, as is indicated in the diagram.

In 1857 Great Britain imported 12,320 pounds of crude rubber from Colombia. The amount increased yearly until 1868, when it was 1,867,376 pounds. There was then a steady decline, until it had fallen to 45,472 pounds in 1900.

No record is available of the first imports of Colombian rubber into the United States, but by 1873 the receipts from that source amounted, in one year, to 5,738,529 pounds, or more than the imports from Pará. Then the decline began, and last year only 815,091 pounds were imported from Colombia.

The record of total exports from Colombia, upon which the diagram is based, is made up by adding the imports from that country, year by year, by Great Britain and the United States, together with small amounts taken by Germany in 1899 and 1900. There is no consideration here of the small shipments direct to France, and also to Germany during certain years

other than those mentioned. It may be mentioned that the quantity received by the United States during some of the earlier years has been estimated, since the custom-house returns for those years take account only of values. But if absolutely accurate figures could be obtained, they would not affect the general conclusion to be arrived at—that the rubber resources of Colombia have been simply wasted.

The rapid decline in the Colombian production of rubber gave no concern to consumers, for the reason that discoveries of rubber were being made elsewhere at a rate which gave a steady impetus to the world's total production. New fields have been opened constantly elsewhere in South America, and the enormous output from Africa has occurred almost wholly since the palmy days of rubber collection in Colombia.

But the situation in Colombia is referred to here as affording an object lesson which, ultimately, must be considered seriously throughout the rubber world. The *caucheros* of Colombia had no sooner devastated the richer and more accessible rubber districts of that country, than they descended to Ecuador, and, following the principal streams, repeated their work of destruction in that country. Thence they entered Peru, Bolivia and eastern Brazil—everywhere, without molestation, carrying on the work of extinguishing the rubber tree.

Eleven years ago the United States consul at Pará, Major Kerbey, reported to his government:

The Peruvian rubber or caucho forests are already fast disappearing, and the nearest are now far away. The practice of felling the tree to collect the rubber has destroyed all the trees near the rivers, except far up on the Ucayali and Javary rivers. It is affirmed that extensive tracts of forests have not yet been touched, but that they are difficult of access on account of the distance from the rivers and the lack of roads. It is perfectly safe to assert that in the near future all the available caucho forests of Peru will have disappeared unless other methods are speedily adopted.

Other warnings of the same kind have not been lacking, all

the time, but of what avail? The *caucheros* have worked without restraint. It has been nobody's business at Pará how Cauchos were collected, so long as it continued to come down the river into their hands. The manufacturers in the United States and Europe have had no concern in the matter beyond buying at the lowest possible figure at the nearest market. Besides, why should they become alarmed at reports of exhaustion of supplies, when they could see with their own eyes larger imports every year?

The situation may be stated in few words: There are just so many millions of Cauchos trees in South America. It is possible, by cutting down more of these every year, to increase the production of rubber of this type, as is still being done. But the faster this work is carried on, the sooner will be the beginning of the end, when there will be a decline in the output of Cauchos, which may be measured by such a diagram as has been drawn up to illustrate the case of Colombia.

"Cauchos," by the way, is Spanish for Caoutchouc, or India-rubber, and is the name by which this product is known in Colombia. When the Cauchos gatherers descended into the region of the head waters of the Amazon, they were still in Spanish territory, and when they shipped their collections down to Pará, as the quality was different from the Pará rubber, the Spanish name—Cauchos—followed the material to all the markets of the world, to distinguish it from the other shipments from Pará. The tree which produces this rubber is the same as the rubber tree of Central America, and the same that is being planted to-day in Mexico.

It is not alone in South America that the condition above described exists. The rubber output from Assam has fallen off. There is now almost no Madagascar rubber coming to market. THE INDIA RUBBER WORLD lately has recorded a marked decline in the production of Accra, Lagos, and Benguela rubbers. And letters have been received predicting a similar situation in the Congo Free State. In all the countries and districts here referred to the sole method of obtaining rubber is by destroying absolutely the source of supply.

To-day almost the only rubber gathered by other means than the destruction of the tree is the Pará rubber, obtained from the *Hevea* species. Ultimately, unless other means are adopted with regard to rubber species, the Pará trees must be the world's sole reliance for rubber, and even these are known in many cases to be damaged by careless or excessive tapping.

The one encouraging sign is the tendency toward planting rubber, on a large scale, with a view to harvesting the product under intelligent supervision, by means designed to render the

trees permanently productive. Every ton of rubber that reaches the market, whether from the "Cauchos" districts of South America, or from Africa or the East Indies, emphasizes the future need of rubber plantations, for it means a lessened number of wild trees. And every ton of such rubber strengthens the probability that cultivated rubber produced under right management will sell for all that it costs to grow it—and more.

The illustration on this page is the most eloquent statement that can be made of the causes of the exhaustion of rubber supplies.

It is made from a photograph taken in the Mexican forest; it could be duplicated, practically throughout the rubber belt around the world. In the July issue of the INDIA RUBBER WORLD appeared an illustration of a Balata tree, undergoing similar treatment, and Dr. Obach's work on Gutta-percha contains a view of the felling of the trees which produce this material in Sumatra. The ultimate fate of the Balata and Gutta-percha trees, by the way, has a cer-



DESTRUCTION OF FOREST RUBBER TREES BY NATIVES.

[By courtesy of the Tehuantepec Rubber Culture Co.]

tain bearing upon the rubber interest. The prospect for the production of these gums under cultivation is much less promising than in the case of the India-rubber species, and the time may come when the whole demand for insulating materials, especially for ocean cables, will have to be met from the world's rubber resources.

RUBBER PRODUCTION OF COLOMBIA.

RECORD of Importations from Colombia into the United States for Fiscal Years ending June 30, and into Great Britain for Calendar Years—in Pounds:

YEARS.	United States.	Great Britain.	TOTAL.
1855-1860.....	2,300,920	17,472	2,318,392
1861-1865.....	3,435,264	3,516,240	6,951,504
1866-1870.....	9,608,376	5,594,512	15,202,888
1871-1875.....	22,952,386	3,907,232	26,859,618
1876-1880.....	17,394,793	1,194,144	18,588,937
1881-1885.....	9,503,916	979,136	10,483,052
1886-1890.....	4,309,306	727,516	5,036,822
1891-1895.....	3,848,365	1,035,328	4,883,693
1896-1900.....	3,152,957	1,146,880	4,299,837
Total.....	76,506,283	18,118,460	94,624,743

NEWS comes from Germany of a visit by Prof. George Lincoln Goodale, of the botany department of Harvard University, to Magdeburg, for the purpose of studying the history of the development of the sugar beet, from the period when it was found growing wild on the shores of the Mediterranean, in the hope that by the application of similar principles to the cultivation of rubber a larger yield may be obtained than is now the case.

YIELD OF THE PARA RUBBER TREE.

IN a report on the rubber production in the state of Amazonas, by the British vice consul, Mr. Temple—which, by the way, is the most informing report on this subject that has yet appeared in print—he says: “It is not possible, in the present state of the industry, to give any precise data as to the average yield of latex per tree.” The examination of the books of a number of rubber estates actually working, however, leads the consul to estimate the average yield per tree of cured rubber at 2.2 to 3.3 pounds per season, under favorable conditions, though trees are tapped on estates where the average is not more than 1.1 pounds.

A recent visitor to THE INDIA RUBBER WORLD from Bolivia said that he had never had reason to calculate the yield per tree. If, in a given district, 25 arrobas per *estrada* could be obtained, it was regarded as an exceptionally good yield; when it fell below 10 arrobas per *estrada*, the rubber hunters moved away. Now, counting the arroba as 32 pounds, and one *estrada* as 100 trees, the best rate under this estimate would be 8 pounds per tree, and the smallest 3.2 pounds. But not only is the number of trees per *estrada* variable, but the arroba is not always the same. The fact is, little regard is given to weights except to the total, at the end of the season, and the weight for which the collector finally gets credit, at Manáos or Pará, is less than the estimates made on the rubber “farm.”

A report made to the stockholders of the Société Anonyme La Brasilienne, on the great richness of the rubber on their estate in Bolivia, mentions that a laborer can gather 40 kilograms per fortnight from one *estrada*, which would figure out 13.2 pounds per tree, for a season of 180 working days.

A prospectus of a rubber “farm” for sale on the river Jurua, in Brazil, of 200 *estradas*, gives figures on the yield which point to a yearly average of 15.84 pounds per tree per season. Another private estate for sale on the river Purus is claimed to yield at the rate of 11.88 pounds per tree. But it will be recalled that when the estate of the Visconde de São Domingos, on the island of Marajó, was sold to the Pará Rubber Estates, Limited, the former owner claimed an average yield of 8.8 pounds per tree, though a detailed statement, made for the company's prospectus, of the working of the estate for 1895, figures out only 6.89 pounds per tree—always assuming that the *estradas* embrace 100 trees each. Another company, the Amazonas Rubber Estates, Limited, was “floated” in London on a prospectus which indicated a yield per tree of 17.6 pounds, this being on the river Tefé, above Manáos. Another “expert” quoted in the same prospectus, however, was content to estimate a yield of only 10 pounds. But the promises of these last two prospectuses have not been realized with regard to profits, and presumably have not been with regard to yield.

The English scientific observers sent to the Amazon a good many years ago to study the rubber situation in connection with forming plantations in India, while reporting in great detail the methods of tapping trees and coagulating the latex, singularly failed to note the rate of yield. But Mr. James Collins did mention obtaining “six ounces in three days” from a *Hevea* tree, which, counting 180 days to the working season, would give 22½ pounds to a tree.

Sir Martin Conway, in a work just published, on “The Bolivian Andes,” says that estimates of the rubber yield vary. He found nobody counting on less than 3 pounds per tree per year, and no estimates higher than 7 pounds. The law in Bolivia, by the way, regards an *estrada* as embracing 150 rubber trees.

Here has been summarized about all that has been made pub-

lic in regard to the yield of the Pará rubber tree, and the reader is free to form his own conclusions. To quote the British consul again: “Two trees growing close together and under apparently precisely similar conditions, will often vary very much as regards their yield.”

More accurate data exist with regard to the yield of the Pará rubber tree under cultivation. In the Ceylon botanic gardens the late Dr. Henry Trumen tapped one tree with these results:

At the age of 11 years.....	1 lb. 11¼ oz.
At the age of 13 years.....	2 “ 10 “
At the age of 15 years.....	2 “ 13 “
At the age of 17 years.....	3 “ 3 “
At the age of 19 years.....	3 “ 0¾ “

Superintendent Derry, of the government plantations at Taiping, Straits Settlements, wrote in 1897: “A few [Pará] trees, twelve years old, produced 3 pounds each, but in no instance were the tappings exhaustive.”

THE BOLIVIAN COMPANY.

IT appears that the company for exploiting rubber in Bolivia, mentioned by our British correspondent in THE INDIA RUBBER WORLD for August 1, is one which has been organized through the efforts of Sir Martin Conway, of England, whose interest in Bolivian development has been referred to in these pages more than once. But it does not relate, as supposed in some quarters, to the Acre district, lately in dispute between Bolivia and Brazil. The August *Bulletin* of the Bureau of American Republics gives space to a copy of the contract entered into between the Bolivian government and “The Bolivian Company,” the signature in behalf of the company being that of George H. Bridgman, United States minister at La Paz, whose interest in rubber development has been manifest in different ways of late.

The government of Bolivia on September 25, 1900, authorized Sir Martin Conway to organize, in England and the United States, a company to exploit the natural resources of the province of Caupoliocan and the river Kaka, province of Larecaja, as a result of which has been incorporated The Bolivian Co. The government concedes absolutely 15,000 square miles of territory, to be located within the region bounded by the rivers Beni, Kaka, and Pando. The company shall have for fifty years exemption from duties on all material imported for the development of their concession. They shall deposit with the government in each year one third of their net profits from any source, the same to create a fund for works of public utility. The company are required to send out an expedition, to embrace a surveyor, a mining engineer, and a botanist, to explore the country referred to, and locate the lands to be chosen in behalf of the company. Meanwhile the government agrees not to make concessions to other parties of any lands within the region here referred to. As reported in THE INDIA RUBBER WORLD for August, this expedition has been dispatched already.

It is believed that important mineral resources exist within the district here mentioned, in addition to a wealth of India-rubber.

THE working of rubber has been begun in the department of Santa Cruz, in Bolivia, where the supplies of “fine” rubber are reported very abundant. “Caucho” has also been discovered in southern Bolivia. In order to facilitate the export of these products a national custom house has been established on a tributary of the Paraguay river, the waters of which discharge successively into the Parana and the rio de la Plata, reaching the seaboard at Buenos Aires.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

E NQUIRIES among manufacturers show that the very fine summer which we have experienced has not been without its adverse effect upon this branch. More so than is perhaps generally recognized, this business has become one of hand to mouth, as far as the dealers are concerned. The manufacturer cannot turn out goods to order at a moment's notice, and has perforce to keep a considerable stock, biding his time in some anxiety as to how soon he will be able to dispose of it. A succession of rainy days after periods of drought, such as we have experienced this summer, may make a difference of several thousand pounds to a proofing firm in a day or two, owing to sudden demands for immediate delivery. The regrettable failure of H. H. Royle & Co., Limited, may not have been entirely attributable to the bad season it has been for the proofing trade, but it can hardly have been independent of it. The withdrawal of Mr. Nadin, one of the originators of the firm, was no doubt a source of injury, and it hardly needs to be said that a new firm, unless very substantially backed, finds considerable difficulty in making headway. The falling off in the large government contracts for ground sheets has made considerable difference in the amount of business done in the proofing departments of several of our large factories this year compared with last year, and I hear of short time instead of overtime being worked.

WATERPROOF GARMENT TRADE.

REPORTS of the state of business in this branch are quite reassuring, though one does not hear of any great activity. As in the case of textures, the business has become much more of a hand to mouth one than was formerly the case, practically no stock being now held by the dealers. At one time it was customary for dealers to buy sheets of mechanical rubber and to cut from them valves, washers, etc., to their customers' orders; now, however, the individual orders are sent on to the works where they are expected to be delivered immediately, a state of affairs not particularly conducive to the peace of mind of the manager and his subordinates. As the manager of a large works remarked the other day: "Things are very different to what I can remember, and the alteration in procedure is not acceptable to me, though I have to fall in line with it."

THE MECHANICAL TRADE.

THE "Kopalin" band for preventing puncturing in tires has lately attracted some interest, though it must be confessed from reports to hand that it has not come up to the sanguine expectations of those who have purchased it. The band, which is composed of some material of the nature of leather, is interposed between the tube and cover of pneumatics with the object as just stated. The drawback, however, seems to be that as it is not fixed rigidly in position it is liable to "creep" when the motor is traveling at a high rate of speed, and the friction thus caused sets up enough heat to seriously damage the adjoining parts of the tire. It certainly seems desirable that the band should be attached firmly to the cover, so as to entirely obviate any such friction. It is hardly promising to hear of a new introduction that it is not only of no benefit but that it destroys the tire and causes breakdowns in inconvenient spots. In saying this it is hardly necessary for the writer to aver his disinterestedness; if the disasters which have occurred should turn out to be isolated ones, which should not be taken as a

basis for general condemnation, the fact will be notified in these columns at the first opportunity.—With regard to certain British attempts to produce motor tires of the first quality, the complaints which have arisen seem to be attributable entirely to defections in the canvas and not to the rubber, which is said to be quite equal to that of Michelin's make. This is evidently a matter which requires closer attention than has been hitherto devoted to it. The motor tyre of the Collier-Irwin Co., of St. Albans, is being made by the Leyland and Birmingham Rubber Co. It is a pneumatic tire with a thick thread, considerably elongated so as to reduce friction as much as possible. There seems to be some difficulty in the supply of the Michelin tire by the Dunlop company, and a customer who had to wait two or three weeks said he thought he would be justified in importing it himself under the circumstances. It is a matter of regret to some automobilists that the motor tyre of the Continental company is not to be bought in England, its reputation being such a good one. With regard to the washers used with the clips for fastening the tires in the wheels, it is pointed out to me that some which are sold at a low price are bad economy, as when they crack water gets in and rots the canvas, thus doing considerable damage: this source of injury should be obviated by frequent examination of the washers.

MOTOR TIRE INTERESTS.

IT is interesting to read in THE INDIA RUBBER WORLD of the recent growth of the Balata industry in Venezuela. With regard to the extraction of the body from the bark of felled trees, I was not aware that the use of volatile solvents, which was proposed four or five years ago, had been adopted in earnest. The reservation with which the matter was treated in the report given in this journal precludes any comment of value. Perhaps the cost of naphtha in such out of the way districts would not after all be prohibitive when condensing plant is in operation, though practical men in the Straits Settlements have always been of opinion that processes such as that of Serullas for obtaining Gutta-percha from leaves could never succeed on account of the difficulty attending the obtaining of supplies of naphtha solvent at a low enough price. It is clear that Balata is finding increased application, though I am not in a position at present to give any statistics in reference to its employment for various purposes. In a recent lecture in England Mr. Harrison, government chemist and geologist of British Guiana, seemed to imagine that it was chiefly used in England for insulation purposes, but as far as I can make out this idea is totally erroneous.

BRITISH COMBINES.

THE very unsatisfactory results from the shareholders' point of view, which have attended the large English textile combines, have created quite a revulsion of feeling on the part of the investing public, and any further attempts in this direction would meet with but a sorry reception. One does not hear anything of an attempt to revivify the dry bones of the defunct proposal with regard to rubber works, although a certain amount of pessimism finds expression with respect to trade prospects should the threatened rise in the price of the raw material come to pass. It is certain that should any such attempts be made, the public would be exceedingly shy about giving its support. Even where there is no gross overcapitalization, the excessive sums which important firms will exact as good-will—that very intangible as-

set—coupled with the centralization of management, are now being recognized as factors which work only for evil. In more than one of these concerns agitations are on foot to secure a radical change in management, but as the subject does not directly affect the rubber trade at the moment, it need not be pursued further here.

WITH regard to the humorous remarks on government inspection of manufacture, which appeared in the August issue of THE INDIA RUBBER WORLD, it may be of interest to state that British rubber manufacturers who take up government contracts are liable to periodical visits from some official. Not that this official, who is often the chemist, takes upon himself the duty of in any way superintending the manufacture, as is done in the case of iron and steel inspectors; the visits, between which a long interval of time may elapse, are merely in order to see that the clause notifying that contractors must be *bona fide* manufacturers is being duly observed. The American proposal that an inspector should certify to the amount of Pará rubber used is certainly somewhat startling, and would create quite a flutter in the dove-cotes here if it was to be emulated by our government departments. The position, it may be premised, of such an inspector would not be a particularly enviable one; indeed he would have to be of more than ordinary sagacity if he wished to occupy his position to greater effect than has been the case with our police officers who have had to perform such duties as are enacted in the special order in council referring to the importation of the Colorado beetle, which, by the way, has recently paid a second visit to us, or in the Wild Birds Protection acts.

ALTHOUGH the rubber trade, in conformity with the bulk of our industries, can supply a good many croakers at the present time, there are no signs of any general atmosphere of depression. Here and there, it is true, a lugubrious tone is evident when profits are under discussion, but this state of affairs is certainly not universal. The report of the Leyland and Birmingham company, recently announced, may be taken as an index of the hopeful tone prevailing in sound concerns. By the way, in regard to this company, it should not be overlooked that the dividend of 7½ per cent. at present paid is on a capital which has been considerably "watered" since the old days when dividends from 25 to 40 per cent. were paid. The conversion took place a few years ago, at the death of the chairman, Mr. John Riley, it being considered advisable to make the alteration for certain reasons, one of which was a growing disposition among the workmen to think that in face of such big profits they ought to be paid on a more liberal scale. The recent extensions that have taken place at the works render the concern one of the largest and certainly in many ways one of the best laid out works in the country.

THIS heading is somewhat vague in itself, as affording no indication of what it refers to. The point, however, is not of primary importance as the text will clear up the mystery. Briefly, what I wished to draw attention to as a somewhat important fact for those who are not "in the know" is the business relationship of chairmen as proprietors of rubber factories with firms who, under distinct names, carry on business with the rubber trade in chemicals, textiles, or what not. It is not my purpose to go into details of names or places, but only to refer to the matter in a general way. Let us suppose that the managing director of a rubber factory is also in much the same position in a firm supplying rubber chemicals; the latter firm will be in a position to obtain samples and prices of his competi-

tors' goods in a way which is too obvious to require mention. Further, it is morally certain that mutual business will take place between the two firms to an extent which will render an outsider's chance somewhat remote. In the case of a public rubber company, it will easily be seen that the best interests of the shareholders may suffer to a greater or less extent. There is, however, it should be said, an obverse side to the picture, for where such community of interests is known, independent rubber firms have been known to place their orders for chemicals elsewhere, rather than at a works where they will be carried out, or at any rate, inspected by the proprietor of an opposition rubber works. When the connection is known, then, it will be seen that really no cause for complaint exists, but where ignorance on the matter prevails, those who unwittingly give information which may be used against them, are clearly entitled to commiseration. If the Bill which Mr. Emmott, M. P. for Oldham, has tried, but unsuccessfully, to get through Parliament, does ever become law, the case will be met, as the full names of all partners in firms trading under assumed titles would have to be disclosed for the information of the public.

THE trial of a new system of ore concentration has given such good results, that it seems to portend the rapid decline of the Frue vanner, the machine that a year or two ago displaced the old Cornish treddle for concentrating gold, copper, and tin ores. The reference is made here because a large amount of rubber in the form of wide belting is used in the Frue vanner, and the new process will not require any rubber at all.

REFERENCE has on former occasions been made in these columns to the contracts made by British railway companies for their requirements of rubber goods. In the case of Indian railways these contracts are settled by the consulting engineers, men like Sir Alexander Randel, who have their headquarters in that street of consultants, Victoria, Westminster, to wit. In the case of all such supplies, whether metals, machinery, or rubber, the consulting engineer has his local inspectors in various industrial centers, such as Sheffield, Manchester, and Glasgow, and these gentlemen have the right of entry into the factories where the goods are being made. Samples are regularly taken and forwarded to Westminster, where they are analyzed, if this is considered desirable. This inspection extends to the rubber works (a fact which might have been referred to under one of the above headlines), though its scope is merely that of taking occasional samples, no attempt being made to supervise in any way. When the samples have been approved of the goods are sent direct to the port and do not come under the further cognizance of the London engineer. This class of work is rather sought after by the rubber manufacturers, but it is noticeable that the same firms get the contracts pretty regularly, although tender forms are obtainable by all firms alike, as on the British railway system.

COMPARED with what was the case five or six years ago, the cold cure is more extensively used than at any time since the Dry Heat cure came into general use. It is almost entirely in connection with the single texture printed surface goods and, despite the frequent attempts which have been made to sell substitutes for bisulphide of carbon, this liquid is still master of the field; in fact I cannot hear of its having been supplanted anywhere. Since the introduction of the regulations under the Factory acts it must be said that great improvement has been observed in the health of the work people, and no doubt as time goes on even further success will be attained in rendering the process innocuous to health.

GOVERNMENT INSPECTION.

THE FRUE VANNER.

RUBBER SUPPLIES OF INDIAN RAILWAYS.

RECENT DIVIDENDS.

COMMUNITY OF INTERESTS.

COLD CURE OF TEXTURES.

GUTTA-PERCHA CULTURE IN JAVA.

TO THE EDITOR OF THE INDIA RUBBER WORLD: It is generally known that nearly all of the Gutta-percha now use is obtained from the Dutch East Indies, being shipped to Europe and America via Singapore. In order to gather the product, it is necessary to fell the trees and to remove the branches, as otherwise the sap would not flow freely. The trees generally furnish but a small quantity each of Gutta-percha, and their age, in the primeval forests, must be at least twenty years, in order to yield sufficiently to pay for the work of cutting them.

Great numbers of these trees are destroyed every year, and the natives are therefore compelled to invade the depths of the forests to a greater extent. That the export nevertheless does not diminish materially can be accounted for by the fact that the forests cover immense areas. But, when the situation is studied on small areas, as I did on the Island of Banca, the utter disappearance of Gutta-percha within a few years begins to appear inevitable. It will require many years before the same area can be exploited again. Because some of the *Palaguium* sorts furnish sap only at a late period, and then in small quantities, the probability of their total extinction is not an impossibility.

The government of Netherlands India has for years past considered ways and means to stop this wholesale destruction of Gutta-percha, but that is not an easy undertaking. It is possible to make forestry laws, such as to permit only the felling of mature trees, but the laws in themselves avail nothing unless the necessary personnel is employed to see that they are enforced.

In Dutch Guiana permits for the gathering of Gutta-percha [Balata] are granted by the government, on the payment of 1½ cents per acre. In Germany the proper supervision and care-taking of a forest costs only \$1.50 per acre per year. In Sumatra and Borneo the natives are exempt from this charge, and from the foregoing it can be seen that it is impossible to collect from the natives a tax sufficient to pay even one-half the expense of a proper forest supervision.

The only protection of the Gutta-percha industry from total destruction doubtless is the cultivation of Gutta-percha. Plantations of Gutta-percha surely would be made on a large scale in Java, if a sufficient profit could be derived from them. It is well known that the quinine manufacturers draw their supply mostly from the Java plantations, the forests of South America furnishing scarcely 5 per cent. of the entire world's production. The quinine culture of Java, when properly attended to, is very profitable; when there have been exceptions to this, it may be accounted for by the fact that there has been too much produced.

At present, no private planter of Java would cultivate Gutta-percha, because the time for obtaining a yield from the trees is too great, and the product too small, to make it profitable. This condition, of course, would be reversed if it should prove to be a fact that the product extracted from the leaves is lasting and of good quality. Of course the cost of production must bear a proper relation to the prices at which the product can be sold.

A prominent Netherlands company is at present exploiting the "Ledeboer" process, but inasmuch as the leaves have to be transported from the forests, it is next to impossible to guard against the dishonest methods of the natives, and it would be advisable that the company form plantations, in order that the sources of supply may be controlled.

In the year 1883 the Netherlands Indian government caused

a plantation to be made in West Java, under the superintendence of Dr. W. Burck, assistant director of the botanical gardens of Buitenzorg; this gentleman having made a study of the *Palaguium* sorts in the primitive forests of Sumatra.

A Gutta-percha plantation of *Palaguium oblongifolium*, which yields the best product, had already been made in Java by Teysman in 1854, and from there the seeds were obtained. There is great difficulty in obtaining seeds from the primitive forests. The *Palaguium oblongifolium* grows very slowly in West Java. Besides this tree there were planted in Tjepétir *P. gutta*, *P. borneense*, *P. trenbir*, *P. trenbir* var. *paroisfolium*, and *Payéna Leerii*, the seeds for which were furnished by the older trees of the botanical gardens of Buitenzorg.

Towards the end of the year 1890 these plantations passed from the control of the botanical gardens to the bureau of forestry; they covered at that time an area of over 160 acres, of which 100 were planted with *Palaguium oblongifolium*. The cost, exclusive of the expense of supervision, had amounted to \$26 per acre. In most of the sections the young trees presented a very unfavorable appearance, and the next few years were devoted to improving them. The planting of nurseries was difficult on account of the failure to obtain the seeds, and to multiply gutta trees from slips and marcottas is a doubtful procedure. Exclusive of the cost of supervision, \$80 per acre have been expended within the past few years, and yet the appearance of these gardens is in no wise imposing. As yet these plantations have not yielded one cent's worth of product, and the experimental tappings have given but little Gutta-percha.

The Indian government has petitioned the representatives of the people, therefore, to furnish the necessary means for new plantations, on a larger scale, in order that a more thorough test may be made, in order that the government may keep abreast of its task, as a colonial power.

A. H. BERKHOUT,

Wageningen, Holland, August 18, 1901. Late Conservation of Java Forests.

NOTE.—The calculations of cost above are made upon the basis of American gold. The generic term *Palaguium*, used by Dr. Berkhout, is that commonly accepted in continental Europe, while English authorities designate the same genus *Dichopsis*, and formerly described it as *Isanandra*. By "marcottas" or *marcottas* is indicated a method of treating twigs or shoots so as to cause them to send out roots, after which the twigs are removed from the tree and planted in the ground.—THE EDITOR.

THE FIRST INDIA-RUBBER RAFTS.

IT is related by Sir Clements R. Markham, K. C. B., in one of the volumes of the Proceedings of the Royal Geographical Society, that about 1852 there was developed at Cuzco a strong interest in the subject of finding a water route toward the Atlantic, to which end an exploring party was formed to follow the river Amaru-Mayu, or Madre de Dios. The party was made up of thirty-six youths from the best families of Cuzco, under the leadership of Manuel Ugalde, a talented young artist. Ugalde had conceived the idea of utilizing the India-rubber of the surrounding forests in the construction of a raft, which was done by preparing a number of waterproof cylinders, by native processes, and securing them to poles which formed the framework of the raft. Two such rafts were made, but they came to grief through being dashed upon the rocks below an unsuspected cataract. Ugalde had taken the precaution to provide life belts made from the rubber he had prepared, and the men were all saved. But the expedition had been brought to a standstill, and the exploration of the river was left for a much later date. This has since become an important rubber producing section.

RUBBER PLANTING INTERESTS.

JOSEPH O. STOKES, treasurer and general manager of the Home Rubber Co. and president of the Trenton Rubber Manufacturing Co. and the Joseph Stokes Rubber Co., has accepted the presidency of the Isthmus Rubber Co. of Uvero, another indication that prominent rubber manufacturers are taking an active interest in the cultivation of rubber.

MUTUAL RUBBER PRODUCTION CO., NO. 1.

[Plantation on the Tulija and Agua Clara rivers, department of Palenque, state of Chiapas, Mexico. Offices: 95 Milk street, Boston, Massachusetts.]

INCORPORATED; capital, \$1,440,000. The officers are: *Charles A. Coe*, wholesale rubber goods dealer in Boston, president; *Walter L. Hall, M. D.*, of Medford, Massachusetts, and the owner of a private rubber plantation in Mexico, vice president; *Charles F. Coburn*, a Boston capitalist, treasurer; *D. N. Graves*, who has been connected with another rubber plantation, secretary and general manager; *E. W. Graves*, a trained horticulturist, plantation manager. The company have acquired a tract of 6175 acres, and will plant 600 trees to the acre, with the idea of thinning out later. Shares are offered, payable in installments, each share representing an acre of the plantation.

HONDURAS.

IN our May 1 issue was mentioned the interest of Señor Nicanor Bolet-Monagas, son of the consul general at New York for Honduras, in rubber planting in the latter country. He has since accompanied to Honduras a party of young gentlemen from the States, each with some capital, who intend planting rubber extensively in the neighborhood of Señor Bolet's estate. Señor Bolet has contributed to *El Exportador Americano* (New York), his views on the cultivation of rubber in Central America, in connection with which he recommends concert of action, both for the general advancement of the industry, and in order that the planters may be prepared to protect themselves if the time should ever come, as it has in the coffee interest, that overproduction should lead to a decline in prices and profits.

The report for 1899-1900 of the Honduras ministerio de fomento y obras publicas, states that the cultivation of rubber has been begun in the department of Choluteca. Arthur H. Howland, of the United States, it is stated, has obtained a concession for the establishment of a large rubber plantation in the department of Olancho, and increased interest in rubber planting is being shown by individuals throughout the republic. Crude rubber is produced principally in the departments of Mosquitia, Olancho, and Choluteca. The Mr. Howland referred to was one of the incorporators, November 4, 1899, of the Pan-American Rubber Co., under New Jersey laws, with an authorized capital of \$1,000,000.

George A. Ellis, a civil engineer of Springfield, Massachusetts, has returned home after an absence since September last, having been engaged by the Pan American Rubber Co. (New York) in opening a road 80 miles long from the gulf of Honduras, to Valencia, a town on the river Patuca, where they have a rubber plantation. The road is made necessary by obstructions to the navigation of the river. The Pan American company are now removing the valuable woods on their concession, and gathering wild rubber.

THE GERMAN RUBBER EXPEDITION.

FROM time to time, at the sessions of the German Colonial Industrial Committee, at Berlin, reports are read on the progress of the Gutta-percha and Caoutchouc expedition to the South sea colonies, now in progress under the leadership of Herr Rudolf Schlechter. A recent report related to the botan-

ical gardens at Singapore. Gutta trees (*Dichopsis gutta*) and Caoutchouc plants (*Hevea*, *Willoughbeia*, and *Urceola*) are cultivated. No definite conclusion has been arrived at in the case of the Gutta trees, but the culture of *Hevea* (Pará rubber) is said to have shown very good results. Fourteen year old trees yielded, on being tapped very prudently, 1 kilogram of fine quality. The 13,000 *Hevea* trees in the Singapore botanical gardens will not be tapped again, in order that the largest number of seeds for plantations may be obtained. It is intended to furnish annually from 150,000 to 200,000 seeds, at 1 cent each. The plantations have been made in comparatively swampy localities, which are flooded for a short period in each year, but it is stated that the trees growing on higher ground yield also a liberal quantity of Caoutchouc. Herr Schlechter, in the company of Mr. Curtis, the director of the botanical gardens at Penang, was next to visit the Gutta-percha and Caoutchouc plantations at Penang and Perak. Seeds and cuttings of Gutta-percha and India-rubber trees were to be sent to the South sea colonies, and, also to the German West African colonies.

In a later report Herr Schlechter wrote, from Malacca, in the Straits Settlements: "I next visited together with Tan Chay Yan, a Chinaman, the latter's rubber plantation, situated about six miles from town. What I saw here surpassed my highest expectations. The plantation consisted of a small area of 56 acres. On it were planted *Ficus elastica*—called locally 'Rambong'—and *Hevea* at intervals of 6 meters. The plantation was four years old and was kept in order by five Chinese coolies. As the proprietor assured me, the monthly expenses on the plantation are not higher than \$40 (silver), whilst annually by the sale of young seedlings the sum of about \$2000 has been received. This instance may be unique, as ordinarily four-year old *Hevea* trees do not furnish any seed, as has been the case here. Even one specimen of *Ficus elastica* had some fruit growing."

ON THE UPPER AMAZON.

THE Andes Rubber Co., was incorporated August 15, under Delaware laws, with \$2,000,000 capital, to acquire lands in Peru and Bolivia, and develop the same. The incorporators are Henry A. Parr, Nicholas P. Bond, Thomas F. McGlone, and Edward Powell Hill, all of Baltimore, Maryland, in which city the offices of the company will be located. It is understood that a concession or concessions of rubber territory have already been acquired.

TRINIDAD.

A RUBBER plantation has been established on this island by a Swedish professor of botany and natural history—Professor Bovallius, of the University of Upsala. He has purchased 4000 acres of government land and organized the Narva Estates Co., Limited, to grow India-rubber, cacao, and other native products. It is expected that rubber may be obtained within eight years from planting, and the meantime returns of value are expected from cacao, cocoanuts, and corn. By the way, the growing of cocoanuts is referred to as being very profitable. They were exported from Trinidad in 1899 to the value of \$225,000.

BURMA.

J. H. TODD, of Amherst, Lower Burma, writes to the Isthmus Rubber Co. of Uvero (New York): "Seeing your advertisement in THE INDIA RUBBER WORLD, I now write for particulars and prospectus of the company; also any pamphlet you may have on rubber planting, as I take great interest in the subject and have a small plantation of 5000 trees of *Hevea Brasiliensis* established here two years old, largest tree 12 feet high."

RUBBER PRICES IN GERMANY.

[FROM THE "GUMMI-ZEITUNG," DRESDEN.]

A NEW boom is in sight. That is a description of the picture which the crude rubber market offers at present; a complete turn over has taken place within the last few days. The depression which has been dominant so long, and caused prices to recede, seems to have reached its end. Within the past week [late in August] prices have advanced 3 to 4 pence (English) per pound, and are still moving in that direction. All market reports received seem to agree that the market is firm and prices advancing.

The receipts were only 700 tons during the past month, and stocks are exhausted. The tendency of the market is feverish and prices change hourly, with strong inquiries. The causes for this change can readily be found. By the general unfavorable condition of the exchange, speculation holds aloof from crude rubber; but as now confidence has returned, and money is very flotsam, the speculators have thought it worth while to again turn their attention to the crude rubber market, and force an advance in prices, which has been made easy by the scarcity of stock on hand.

These conditions, of course, create a stir in the circle of rubber manufacturers, who will seek to have the prices of rubber goods follow those of the crude article. It will certainly be impossible for the rubber manufacturers to still further ease their prices in accord with the general industrial depression, and they will be forced, if this boom continues, to advance their prices in the near future.

It would have been better, of course, if no price reductions had been made at the time when crude rubber prices fell off a little, for that the slump was only a passing one could be foreseen with certain assurance. Now, dealers and manufacturers are confronted again with new difficulties, and the old fight to advance prices begins anew. But under present conditions, which are likely to remain unchanged, it can hardly be avoided. Those who are in possession of large stocks of raw material, as well as of manufactured goods, of course, can assume a waiting policy. Dealers would certainly be wise to sufficiently provide themselves, before the boom further develops itself.

"PACIFIC RUBBER CO."

TO THE EDITOR OF THE INDIA RUBBER WORLD: We were quite surprised, after looking through your issue of August 1, to learn that you have found out that the Pacific Rubber Co. are not incorporated and that they did not have any property. We studied their prospectus for three weeks before investing, though we did not find anything in it except that the promise of profit was unusually great. We had done some correspondence with them, and also with other companies to see the difference in their promises. After having studied it over, we have invested, with the intention of depending entirely upon the directors, whom we hear are first class business men. We thought such men as they are described to be, would not have their names spoiled by committing fraud. Another thing—we thought that if a company could use a corporate seal on their shares, it would first have to be incorporated.

One thing that has struck us as funny is that we received a prospectus of the company in June, and lately we received another which had been changed around a little. In the first place, Mr. C. G. Cano, as superintendent of the company, had been left out, and the Mexican manager had been left off the column of officers. However, at present we cannot say any-

thing, because they only promise dividends, payable monthly, which we received on the fifth of every month.

We received a letter recently from the United Securities Co. saying that the Pacific Rubber Co. have secured a contract, which will enable them to purchase 120,000 acres of adjoining rubber property in Mexico.

Brooklyn, N. Y., September 4, 1901.

SOME WANTS OF THE RUBBER TRADE.

[189] FROM Iowa a request comes for the names of manufacturers of small rubber balloons, such as can be retailed at 5 or 10 cents.==The same mail brings a like request from a dealer in Illinois.

[190] "Can you furnish me with the addresses of manufacturers of hot water bottles in England, France, Germany, Belgium, and Canada?"

[191] From Missouri: "Please send us a list of rubber reclaimers."

[192] A western house, in another line of rubber goods, writes: "We might be interested in a line of rubber boots and shoes to job, if we could run up against the right proposition."

[193] From a New York newspaper: "Will you kindly give us a list of those firms engaged in the rubber industry which have been in business fifty years or more?"

[194] From Senglea, Island of Malta: "You will oblige us if you inform us the address of some factory of India-rubber."

[195] From Chicago: "In getting together a number of industrial sets for use in our schools, it has been found desirable to secure an assortment of photographs or good prints illustrating the rubber industry. Can you favor us with addresses of parties likely to have these?"

[196] From Louisiana: "We desire to order several hundred large India-rubber straps and bands, and would be pleased to find a price list of such goods, stating dimensions."

[197] "Can you give us some names of firms making a business of equipping rubber manufacturing plants complete?"

[198] From Massachusetts: "Who manufactures a rubber covering for horse bits, other than tubing? We want something in the way of tape, with which the steel bit can be wrapped."

[199] "Are there any manufacturers of oilcloth outside of the recently organized Standard Table Oilcloth Co.?"

[200] From Iowa: "Who can supply rubber pads for barbers' scissors, and also rubber bibs?"

[201] From a jobbing house: "We should like to have you advise us who manufactures a rubber door bumper. We have several inquiries for bumpers of this kind, with a rubber ball hanging on a string."

[202] A request has come to us for information concerning a rubber substitute called "Andeline."

[203] From Germany: "I should feel greatly obliged if you could name a person in the United States who would be willing to act as agent for me in the sale of rubber waste."

FRANCIS J. HOLLOWAY, of the Kepitigalla estate, Metale, Ceylon, reports in the *Times of Ceylon*, having sent a consignment of Pará rubber produced on his estate [presumably to London], in regard to which he received this communication: "Good clean sheet, valued at 3s. 9d. per pound. This is very nice rubber, as good, or better, than the finest Pará rubber. Therefore, when you see the quotations for fine Pará rubber, you may assume that this is the value of your produce. Rubber like yours is readily saleable in any quantity." He strongly advises planting.

NEW TRADE PUBLICATIONS.

WERNER & PFLEIDERER (Saginaw, Michigan) issue a new edition of an illustrated description of their "Patent 'Universal' Masticator," which has come into extensive use in Europe, and more recently in the United States, for kneading and working up India rubber and Gutta-percha, and incorporating other ingredients. [7½"×9¾". 8 pages.]

BOSTON BELTING CO. have issued a new general catalogue of "Mechanical Rubber Goods," which is the most extensive and complete of their publications to date. This book is much more than a mere list of factory products; it is a reference book of value regarding the properties and the proper care of rubber belting, for instance, with specifications to guide the buyer in stating his requirements for any particular use of belting. There is also information of use in regard to hose, packing, and other staple goods, as well as descriptions of the Boston Belting Co.'s products in each line, with prices. Rubber rolls and printers' blankets receive special attention. The catalogue is well illustrated, is printed in colors, and altogether marks a distinct advance over the days when anything in the way of printing was considered good enough for a trade catalogue. An interesting feature is a pictorial contrast between the single small building in which the company's business was begun, 72 years ago, and the extensive establishment in which is now involved \$1,000,000 of paid in capital. [5¾"×8¾". 164 pages.]—An extra copy of this catalogue, attractively bound in cloth, forms a welcome addition to the office library of THE INDIA RUBBER WORLD.

NEW YORK BELTING AND PACKING CO., LIMITED, issued especially for distribution at the Pan American Exposition a neat brochure devoted to their "Interlocking Rubber Tile." It is illustrated with views of interiors floored with this material. [4¾"×6¾". 8 pages.]—From the same company comes an illustrated catalogue of "Packings," of which a very full line is described. It is a handsome booklet. [3¾"×6¾" 24 pages.]

B. F. STURTEVANT CO. (Boston) issue, as their Catalogue No. 118, "Steam Hot Blast Apparatus," giving illustrations of various types, and details of construction, with data as to their efficiency. [6¾"×9". 54 pages.]

FRANZ CLOUTH RHEINISCHE GUMMIWAARENFABRIK (Cologne-Nippes, Germany) send us a price list of India-rubber insulating gloves, for use in electrical work, being their price list No. 19. [6"×10". 4 pages.]

W. S. NOTT CO. (Minneapolis, Minnesota), a long established jobbing house, send us their "Catalogue A-z" of mechanical rubber goods and of leather belting, of which latter line they are extensive manufacturers. Rubber goods receive chief attention, however, including such accessories as belt fastenings, hose reels, and the like. The rubber manufacturers whose products are represented are of the highest standing, and the catalogue is a very complete one of its class. It is neatly bound in cloth. [5"×7¾". 184 pages.]

ALSO RECEIVED.

CHARLES NUHRING, Cincinnati, Ohio.—Interior Fire Hose Appliances. 16 pp.

Joseph Dixon Crucible Co., Jersey City, New Jersey.—Graphite for Automobiles. 12 pp.

Gorrien's Portable Shower Bath Co., Minneapolis, Minnesota.—Gorrien's Portable Shower Bath. 16 pp.

New Jersey Car Spring and Rubber Co., Jersey City.—Price List. "Wemaka" Perfect Vehicle Tire. 4 pp.

The Gandy Belting Co., Baltimore, Maryland.—The Gandy Belt Price List. 4 pp.

RUBBER NOTES FROM EUROPE.

THE Gummi Zeitung, of Dresden, hears that "a rubber factory is to be installed in Brazil; the founder intends to visit Germany in the near future to order the necessary machinery for the same."

=The Milan (Italy) branch of the *Elektricitäts-Aktiengesellschaft*, vorm. W. Lahmeyer & Co. (Frankfort o/M.), has been made a separate stock company, with a capital of 500,000 lire, and the former representative in Italy of the Lahmeyer firm, Herr Ad. Egger, has been appointed director of the new company.

=The B. F. Goodrich Co. (Akron, Ohio) are mentioned as having made an interesting display of druggists' sundries, from their London depot, at the Chemists' Exhibition, held August 26-30 at Covent Garden Theater, London. They were the only rubber firm, by the way, making such an exhibit.—Mr. R. M. Howison, formerly managing director of the Goodrich European depot, has returned to the United States, being succeeded by Mr. Arthur E. Lumsden.

=Mr. L. Sgal, long connected with the crude rubber interest and latterly with rubber manufacturing enterprises in Europe, removed some time ago from Liverpool to Vienna, on account of his health. It is understood that the change of climate has been of great benefit to him. He has not lost his liking for the rubber interest, and it is not unlikely that he may again become closely connected with rubber manufacturing.

ONE CONGO RUBBER TRADING COMPANY.

THE Société des Produits Végétaux du Haut Kassai, one of the Belgian companies trading in the Congo Free State, dates from 1894, and have in time come to have a capital of 1,250,000 francs (= \$250,000.) From a recent statement it appears that the amount of Caoutchouc (among other commodities) handled by the company, together with the profits for each year, has been as follows, the year ending May 31:

YEAR.	Caoutchouc.	Profits.
1895-96	77,000 pounds.	123,067 francs.
1896-97	123,000 "	263,720 "
1897-98	112,200 "	279,737 "
1898-99	176,000 "	454,532 "
1899-1900	191,400 "	355,859 "

The report of the *Société Anonyme Belgika*, presented at a meeting of the shareholders at Brussels on July 30, stated that during the year 1900 there had come into their possession, through their operations in the Congo Free State, 242,506 pounds of Caoutchouc.

A QUESTION FOR THE CURIOUS.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Which would have the greater elastic property, strength, and durability—ten bands of India-rubber each ¼ inch thick, 5 feet long, and 2 inches wide, or one band 1 inch thick, 5 feet long, and 2 inches wide? There would be the same quantity of rubber used in either case.

F. M. T.

THE New England Electric Vehicle Co. (Boston) has declared a dividend of \$2.50 on each share of stock on which \$10 has been paid in, payable August 15. The number of shares outstanding is 225,120, and the amount to be distributed is about \$562,000. By this action of the directors, the company is formally dissolved. This statement does not take account of certain property held by the company which may admit of the payment of a later small dividend.

NEW GERMAN RUBBER TARIFF.

THE German government has published the new tariff schedules which it is proposed to put into effect on January 1, 1904. The bill itself remains to be presented to the Reichstag, and it is likely that many of the provisions may be changed when the matter comes up for debate, but it is not anticipated that the general character of the bill will be changed, since sentiment among manufacturers for increased protection appears to be growing throughout the country. The principal items relating to India-rubber manufactures are as follows, the rates being expressed in the equivalent in United States gold, per 220.46 pounds ("double hundred weight"), under the proposed bill and under the existing tariff:

	Old Rate.	New Rate.
Rubber shoes, not varnished.....	\$ 9.52	\$16.66
Rubber shoes, varnished	14.28	13.80
Rubber solution.....	.71	1.43
Soft rubber paste .....	.71	1.90
Patent rubber plates.....	.71	2.85
Rubber threads, drawn or cut. ....	.71	9.52
Rubber threads, covered with cotton	9.52	14.28
Rubber threads, covered with silk.	9.52	17.85
Pneumatic tires, inner tubes.....	9.52	23.80
Pneumatic tires, outer tubes.....	9.52	23.80
Hard rubber, unvulcanized.....	Free	1.90
Hard rubber, dental.....	Free	23.80
Hard rubber, in plates, but not in the form of finished goods	Free	3.57
Hard rubber tubes, not finished.....	Free	10.71
Other hard rubber.....	9.52	10.71
Rubber printers' rollers and blankets.....	a	6.90
Rubber flower stems.....	a	13.80
Rubber belting.....	a	6.90
Other soft rubber goods	a	5.52

[a Not stated in our report.]

Goods of Gutta percha and Balata, not being specified separately, are subject to the same rates as corresponding goods of India-rubber.

RUBBER CONSUMPTION IN RUSSIA.

FROM the same official sources from which THE INDIA RUBBER WORLD has been accustomed to obtain statistics relating to the rubber industry in Russia, figures have been received for the year 1900. It must be said, however, that they do not convey a very clear idea of the situation—particularly the statement of values of crude rubber imports into Russia. Compared with four years preceding, the figures for 1900 show imports:

YEARS.	Pounds.	Value.
In 1896.....	16,200,000	\$1,877,000
In 1897.....	14,572,280	4,707,446
In 1898.....	16,159,360	5,763,944
In 1899.....	11,268,000	7,149,492
In 1900.....	9,432,000	9,641,612

The exportation of Russian manufactures of India-rubber—mainly "galoches"—has been as follows:

	1897.	1898.	1899.	1900.
Galoches	\$1,375,773	\$1,395,839	\$1,201,395	
All other.....	71,001	70,647	93,639	\$1,673,584
	\$1,446,774	\$1,474,486	\$1,385,034	

The latest figures available do not embrace imports of rubber goods into Russia for 1900. The figures for 1899 were \$451,731.

THE Mexican Mutual Planters' Association (Chicago) inform THE INDIA RUBBER WORLD that a native rubber tree on their plantation at La Junta a short time ago was tapped, yielding in 44 minutes 24¼ pounds of latex, from which was made 9½ pounds of rubber, which is now on exhibition at their Chicago office. The age of the tree was supposed to be about 20 years.

RUBBER SECRETS WILL OUT.

From the Philadelphia North American:

THE Andes Rubber Company, recently incorporated with a capital of \$2,000,000, will build a large rubber factory in Baltimore.

From the Pittsburgh Gazette:

O. S. OVERLIN, a prominent business man of McKeesport, received a letter from the officials of a rubber company, the name of which he refuses to disclose at present, who are seeking a new location. They say that if McKeesport will donate eight acres for a site, where they could purchase four acres more, they would accept it immediately, and guarantee to employ at least 4000 hands, and probably 6000. The company is capitalized at \$2,500,000.

From the Cincinnati Enquirer:

A NEW industry has sprung up within the last few months directly traceable to the advance in the price of rubber. Where old rubber was formerly largely thrown away, or saved and sold for a small price, it is now being saved and collected together by those who know of the existing conditions. The handling of old rubber has now come to be quite an industry, and, as long as they can do so, the dealers are keeping rather quiet about the business, because they see that when people become acquainted with the value of old rubber it will not be as easy to get for nothing.

From the Delaware (Ohio) Gazette:

AFTER a contest of over two years with competing rubber tire companies, William Kiteiling, of Marysville, has secured a patent which it is claimed will revolutionize the trade. Kiteiling is a blind man and a veteran of the civil war.

From the Manchester (N. H.) Union:

THERE is a woman in town who claims that she is really the originator or the cause of the origination of rubber heels for shoes. This person is Mrs. H. E. Chaffee. Fifteen years ago she was residing in Boston, and her brother-in-law was proprietor of a cobbler's shop. There are many kinds of rubber heels in use to-day, but Mrs. Chaffee claims that the first rubber heel was made for her from an old clothes wringer in her brother-in-law's shop.

EXPORTS OF AMERICAN RUBBER GOODS.

THE values of exports from the United States of goods classed as "manufactures of India-rubber" during the first seven months of 1901, compared with former years, are stated officially as follows:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
Jan-June.....	\$300,095	\$200,267	\$920,334	\$1,420,706
July.....	51,554	91,089	153,488	296,121
Total, 1901	\$351,649	\$291,356	\$1,073,822	\$1,716,827
Same, 1900	317,726	251,525	861,627	1,430,878
Same, 1899	(a) 51,535	126,310	921,942	1,099,787

(a) Not separately reported prior to July 1, 1899.

[Exports to Hawaii and Porto Rico not included.]

There were exported in July 248,082 pairs of rubber footwear, against 100,307 pairs in July, 1900, and bringing the total exports for the present calendar year up to 634,339 pairs. Exports of reclaimed rubber, from January 1 to July 31 have been:

	1899.	1900.	1901.
Value.....	\$326,939	\$329,297	\$213,703

LITERATURE OF INDIA-RUBBER.

KOLONIAL-WIRTSCHAFTLICHES KOMITEE. EXPEDITION NACH Central-und Südamerika. Dr. Paul Preuss. 1899-1900. Berlin: 1901. [Cloth. 8vo. pp. xli+452+20 plates. Price 20 marks.]

DR. PAUL PREUSS is the director of the botanic gardens at Victoria, in the German colony of Kamerun in West Africa. In that colony no little attention has been given—induced largely by the efforts of Dr. Preuss—to the introduction of the culture of various economic plants not found native there, including several rubber yielding species. In the very comprehensive and substantial appearing volume before us, Dr. Preuss has outlined his itinerary—beginning at Amsterdam June 1, 1899, and ending in Berlin on July 20 in the following year. Meanwhile he visited Venezuela, Colombia, Ecuador, Trinidad and other West Indian islands, most of the Central American states, and Mexico. He was interested particularly in seeing plantations—or the native growths—of cacao, coffee, vanilla, Peru balsam, and India-rubber. The second part of this volume is a series of chapters each summarizing Dr. Preuss's observations in regard to one of the products above mentioned. The chapter on Caoutchouc yielding plants is devoted largely to the *Castilloa* species, several plantations of which, and the methods employed, are recorded. Dr. Preuss was also much interested, however, in the *Sapium* rubber species of Ecuador and Colombia, and illustrates three of these, including two named by himself. There are in addition to the *Sapium biglandulosum*, of Colombia, which has been known for years as a rubber tree. In another chapter, under the head of Gutta-percha yielding plants, appear notes on Chicle, the "chewing gum" plant; Balata, "Tuno," and other gums, but no real Gutta-percha, of course. In addition to the 20 plates mentioned above, this book contains 78 engravings scattered through the text, of a character most helpful to the reader in understanding the conditions of travel and life and also of tropical planting, is observed by Dr. Preuss.

This work forms a fitting companion volume to one published some time ago by the German Colonial Industrial Committee and noticed in THE INDIA RUBBER WORLD of February, last, Rudolf Schlechter's report on the West African "Kautschuk expedition." There is now in progress a third expedition, in part for the study of rubber planting, through the Far East, also in charge of Herr Schlechter.

STRAITS SETTLEMENTS.—ANNUAL REPORT ON THE BOTANIC Gardens, for the year 1900, by H. N. Ridley, Esq., Director. Singapore: Government Printing Office. 1901. [Folio. pp. 19.]

THIS report is included among our list of publications on India-Rubber on account of the interesting data which it contains in relation to the experimental planting in the Malay states, of both rubber and Gutta-percha.

THERE has been established at Caracas, Venezuela, a monthly periodical entitled the *Boletín de Agricultura y Cría* [Agriculture and Breeding], being the organ of the Superior Council of Agriculture. It is conducted by Francisco de P. Alamo. Each of the four numbers which have reached this office contains notes on "caucho" or "goma elastica," though none of them happen to relate to rubber in Venezuela.

IN CURRENT PERIODICALS.

NOTICIAS acerca de plantas que dan Caucho. [From "As Heveas ou seringueiras," by the director of the botanical garden at Rio de Janeiro.] = *Boletín de Agricultura y Cría*, Caracas. I-4 (April, 1901) pp. 42-46.

Electric Cable Making in Great Britain and on the Continent = *Cassier's Magazine*, New York. XXI-3 (July, 1901). pp. 194-208.

Die Kautschukproduktion Afrikas. By Dr. E. Friedrich. [With map.] *Deutscher Geographischer Blätter*. XXIV-2 (1901). pp. 9-15.

Bons et Mauvais "Castilloa." [Discussion of recent pamphlet by Th. F. Koschny, of Costa Rica.] = *Journal d'Agriculture Tropicale*, Paris. I-1 (July 31, 1901). pp. 17-20.

Reisebericht der Guttapercha- und Kautschuk-Expedition nach den Südsee-Kolonien. By R. Schlechter. [Relates mainly to rubber plantations in Sumatra.] = *Der Tropenpflanzer*, Berlin. V-8 (August, 1901). pp. 372-382.

Les Plantes à Caoutchouc au Jardin d'Essai de Conakry [French Guiana.] By M. Tessonier. = *Revue des Cultures Coloniales*, Paris. IX 84 (September 5, 1901.) pp. 132-136.

Visite à une Usine Installée pour le Traitement Mécanique des Écorces à Caoutchouc. By M. Arnaud. = *Revue des Cultures Coloniales*, Paris. IX 84 (September 5, 1901.) pp. 136-139.

Über die Stammpflanze des Donde Kautschucks und ihre Praktische Bedeutung. By Dr. Walter Busse. [A report to the government of German East Africa, on the importance of a new rubber species, discovered in Donde land, and designated by Dr. Busse as *Landolphia Dondeensis*; with plate.] = *Der Tropenpflanzer*, Berlin. V-9 (September, 1901.) pp. 403-410.

A propos du *Castilloa Tunu* (Hemsley) et d'autres *Castilloa* nouveaux. By Eugene Poisson. = *Journal d'Agriculture Tropicale*, Paris. I-2 (August 31, 1901.) pp. 35-37.

Pourquoi les *Ficus elastica* d'Alger ne donnent pas de Caoutchouc? [Correspondence of J. Vilbouchévitch and Charles Rivière.] = *Journal d'Agriculture Tropicale*, Paris. I-2 (August 31, 1901.) pp. 37-40.

MINERAL RUBBER IN BRAKE SHOES.

A NEW and interesting application of Mineral Rubber is mentioned in connection with the cast iron brake shoe such as is used for either steam or electrical railroads. It will be noted that the face of the shoe is recessed, the cavities being filled with a mixture of Mineral Rubber and iron filings. This more than doubles the life of the shoe, and almost entirely does away with the wear on the tread of the wheel. There is also a marvelous increase in braking power. The wisest way, perhaps, to illustrate this is to quote a few tests made on one of the largest railway systems in the United States. ENGINE NO. 562—Equipped with A. & M. Driver Brake Shoes, October 21, 1900:

	Removed.	No. days Service.	Regular Shoe Average No. Days.
Right front	Nov. 25	35	14
Right back	Nov. 11	21	7
Left front....	Nov. 25	35	14
Left back.....	Nov. 18	28	7
Total days service.....		119	42
Average days per shoe.....		30	10½

ENGINE TANK NO. 562—Equipped with A. & M. Brake Shoes, October 21, 1900:

	Removed.	Days' Service.	
Two shoes.....	Nov. 15	25	Average service ordinary shoe, 14 days.
One shoe.....	Nov. 18	28	
One shoe.....	Nov. 25	35	
Total days service.....		88	
Average days service....		28	

ENGINE NO. 546—Equipped with A. & M. Driver Brake Shoes, October 22, 1900:

	Removed.	No. Days Service.	Their Shoe Average.
Right front.....	Nov. 22	31	14 days.
Right back.....	Nov. 19	28	4
Left front.....	Nov. 22	31	14
Left back.....	Oct. 28 (lost)	6	4
Total days service.....		96	36
Average days service.....		30	9

The brake shoe, by the way, is manufactured by the Allen & Morrison Brake Shoe and Manufacturing Co., No. 604 Fisher building, Chicago.

RECENT RUBBER PATENTS.

UNITED STATES PATENT RECORD.

ISSUED AUGUST, 1901.

NO. 679,784. Exercising machine. Michael B. Ryan, London, England.

680,086. Machine for manufacturing rubber articles. Frank H. Turner, Hartford, Connecticut.

ISSUED AUGUST 13, 1901.

680,266. Process of preparing rubber adulterant. William V. McManus, New York city.

680,332. Pneumatic tire and method of attaching. William Kightlinger, Marysville, Ohio.

680,387. Rubber cement. Leslie R. Moore, Newton, Massachusetts.

680,392. Means for securing resilient tires to vehicle wheels. Harry A. Palmer, Erie, Pennsylvania.

680,430. Composition for closing punctures in pneumatic tires. William H. Simmons, San José, California, assignor of one-half to Harlow J. Ayres, same place.

680,426. Substitute for India-rubber or Gutta percha. Adam Cairns, Glasgow, Scotland.

680,556. Exerciser. Henry W. Wieland, London, England, assignor to John Charles Wray, Lambeth, England.

680,654. Rubber gearing. George W. Gomer, Conyngham, Pennsylvania, assignor, by mesne assignments, to American Multiplex Talking Machine Co.

ISSUED AUGUST 20, 1901.

680,776. Pneumatic tire. William E. Hoyle, Providence, Rhode Island, assignor to Rudolph F. Morse and Samuel H. Boardman, same place.

680,870. Device for attaching rubber washers to bottle stoppers. Frederick Leu, College Point, New York, assignor to Max C. Rosenfeld, Boston.

681,151. Tire. Frank Theodore, Greenville, South Carolina.

ISSUED AUGUST 27, 1901.

681,310. Vehicle tire. John Glenn, St. Louis, Missouri.

681,411. Soft tread horseshoe. Charles P. Dryden, Chicago, assignor of one-half to George B. Dryden, same place.

681,464. Horseshoe. George L. Warner, New York city.

681,544. Horseshoe. Michael Hallanan, New York city.

681,619. Means for securing tires to wheels of road vehicles. Arthur T. Collier, St. Albans, England, assignor of one-half to Edgar Oliver Goss, London.

DESIGN PATENTS.

34,932. Pneumatic tire. Isaac S. McGiehan, New York city. August 13, 1901.

34,974. Carriage tire and rim. Woodburn Langmuir, New York city. August 27, 1901.

34,982. Cushion. Christian William Meinecke, Jersey City, New Jersey, assignor to Meinecke & Co., New York. August 27, 1901.

TRADE MARKS.

36,949. Rubber packing, tubing and hose. The Combination Rubber and Belting Co., New York, and Bloomfield, New Jersey. August 27, 1901.

ENGLISH PATENT RECORD.

APPLICATIONS.—1901.

14,860. Charles John Bailey, 55, Chancery lane, London. Water bags. July 22.

14,870. William Robertson, Bethnal Green road, London. Air tubes for tires. July 22.

14,910. Arthur Guy Ellis, 18, Southampton buildings, Chancery lane, London. Tires for cycles and vehicles. July 22.

15,025. Henry Douglas Earl, Manchester. Pneumatic tires. July 24.

15,058. James Edgar Baxter and The Leyland and Birmingham Rubber Co., Limited, 111, Hatton garden, London. Seamless rubber balls. July 24.

15,224. Henry Arkell, 40, Lindore road, Rattersea Rise, London. Elastic tires and metal rims of wheels for vehicles. July 27.

15,240. Charles Cunningham Black, Shettleston, Lanarkshire. Machines for stamping, pressing, or moulding metals, Gutta-percha, India-rubber, and the like. July 27.

15,252. Vincent Willis, 9, Rochester terrace, Camden Town, London.

Tools for removing or replacing the covers of pneumatic tires. July 27.

15,380. Allison Arthur Sim, Liverpool. Appliances for pneumatic tires. July 30.

15,639. George Franklyn. Pneumatic tires. August 2.

15,700. James Mitchell, Merrow, Guildford. Tire puncture proof shield. August 3.

15,735. Herbert Allard Stonard and Horatio Sheaf, 5, Hatton garden, London. Means for attaching elastic tires to wheels. August 3.

15,967. Frederick William Schroeder, 9, Arundel street, Strand, London. Pneumatic tires for vehicles. August 8.

16,021. Albert Claudius Sievers, Kensington, London. The Sievers rubber and steel rim tire. August 9.

16,050. Jonathan Aldous Mays, Walter William Roff, and William Henry Roff, 75, Chancery lane, London. Pneumatic tires. August 9.

16,078. George Newell Milward and George Frederick Newman, Birmingham. Pneumatic tyres. August 10.

16,238. Nathaniel Greening and Edward Sherlock. Pneumatic tires. August 13.

16,439. Alexander Bodenheimer, 111, Hatton garden, London. Pneumatic tires. August 15.

16,442. Frederick Charles Lohden and Arthur Betjemann, 10, Great Saint Helen's, London. Improvements in overcoats, waterproof coats and mackintoshes. August 16.

16,485. Henry George Frasi, Birmingham. Elastic tires. August 16.

16,505. Morten Olsen, 36, Chancery lane, London. Waterproof composition for leather, rubber and other materials. August 16.

PATENTS GRANTED.—APPLICATIONS OF 1900.

6719. Rubber tire. Grant, T., Brighton, Sussex. April 10, 1901.

6917. Horseshoe pads. Deitz, E., 56, rue d'Aboukir, Paris. April 12, 1901.

6919. Exercisers. Korth, J. C., and Ganzenmuller, A., No. 215 Bowery, New York, United States. April 12, 1901.

6943-6944. Rubber type. Duncan, J. S., No. 173 South Canal street, Chicago, United States April 12, 1901.

6959. Method of attaching pneumatic tires. Bryan-Haymes, R., Thornfield, Kingsbridge, Devonshire. April 12, 1901.

6972. India-rubber substitutes. Prampolini, W., San Luis Potosi, Mexico. April 14, 1901.

7124. Solid rubber tire and method of attaching. Keyes, H. W., 403 Decatur street, Brooklyn, United States. April 17, 1901.

7413-7414. Method of attaching wired on rubber tires. Wise, W. L., 46, Lincoln's Inn fields, London. [Calumet Tire Rubber Co., Chicago, United States.] April 21, 1901.

7483. Tire protector. Bowyer-Smyth, D. M., Twineham Court, Sussex. April 23, 1901.

7507. Pneumatic tire. Tanghe, H., 171, Avenue de Neuilly, Seine, France. (Date applied for under Sec. 103 of Patents Act, 1883, December 9, 1899.) April 23, 1901.

7521. Pneumatic tire. Fiedler, H., Dohren, Germany. April 24, 1901.

7631. Vulcanizing India-rubber balls, etc. Doughty, H. J., Providence, Rhode Island, United States. April 25, 1901.

7975. Pneumatic tires. Williams, W. F., 17, Great Pulteney street, Golden Square, London. April 30, 1901.

8054. Tire protector. Lunant, J., 215, Avenue de Saxe, Lyons, France. May 1, 1901.

8172. Pneumatic tire. Merington, C., Norwood, Surrey. May 3, 1901.

RUBBER POUCHES FOR QUININE.—Many Americans and Englishmen living in Mexico are constant users of quinine, says the New Orleans *Times-Democrat*. "They generally keep the stuff in rubber tobacco pouches, to protect it from perspiration, and when they feel like taking a dose they dig in with one of those spatulated knives that they all carry and swallow as much as they see fit."

WILLIAM ALLEN WHITE, a Kansas editor who is much quoted, in illustrating the prosperity of his state, remarks: "Automobiles run on the streets of Emporia. Rubber-tired buggies are the rule rather than the exception for the farmer boy to ride in with his best girl on a Sunday afternoon."



RUBBER GOODS

Our three brands,—single, double and triple diamond,—correspond to three qualities. A single diamond means "Carbon" grade—a good article; a double diamond means "Double Diamond" grade—a fine article; a triple diamond means "1846 Para" grade—a splendid article and the best we can make. Our brands on hose, belting, packing

*Belting,
Garden Hose,
Water Hose,
Fire Hose,
Suction Hose,
Steam Hose,
Air Hose,
Tubing,
Rod Packing.*

and other rubber goods are guarantees of high quality and long service.

Chicago,150 Lake St.
St. Louis,411 No. Third St.
San Francisco, 509 Market St.
Boston,24 Summer St.
Philadelphia, 724 Chestnut St.

*C. I. Packing,
Rubber Packing,
Gaskets,
Valves,
Rubber Tiling,
Rubber Matting,
Emery Wheels,
Specialties,
Vehicle Tires.*

NEW YORK BELTING & PACKING CO. LTD

PIONEERS AND LEADERS—25 PARK PLACE, NEW YORK.

Mention The India Rubber World when you write.

—RUBBER BELTING—

for Elevator, Thresher, Saw and Planing Mill Work.

"Warranted 2XL,"

"Shield High Grade,"

"Cleveland Stitched,"

"Buckeye."

Good belting at low cost is the result of experience and up-to-date equipment—WE HAVE BOTH.

We also make a complete Line of Steam, Fire, Suction and Conducting Hose, Packings, and Molded Goods.

SEND FOR 120 PAGE CATALOGUE.

THE MECHANICAL RUBBER CO.,

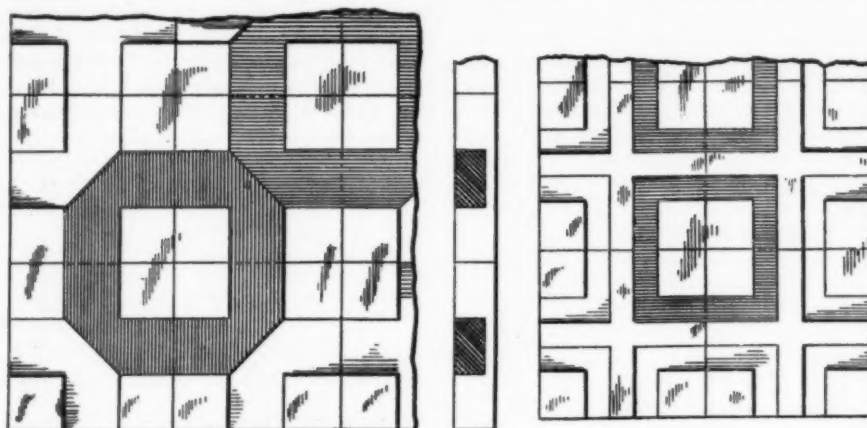
. . . . CLEVELAND, OHIO.

Mention The India Rubber World when you write.

NEW GOODS AND SPECIALTIES IN RUBBER.

RUBBER FLOOR TILE.

A PATENT has been granted to George H. Bennett, of New York, for a novel construction in rubber floor tiles. In brief, the new system consists of a series of tiles, completely covering the floor, each tile having portions cut away from the top, to form channels or recesses having vertical walls. Locking pieces or tiles are provided to



fit into these recesses and fill the spaces between their surface portions and to engage such base tiles to secure them together laterally. It is intended that the inlaid rubber sections shall be of a different color from the base tiles, in order that a mosaic effect may be produced. In the figures presented herewith, selected from the drawings filed at the patent office, are shown two designs—one in which the inlaid tiles are octagonal in shape and one square. In each case there appears in the open space in the center of such inlaid tile a view of one corner of each of four base tiles, illustrating the manner in which the base tiles are locked together. In the sectional piece appearing between the other two cuts is indicated the depth to which the base tiles are channeled for the reception of the interlocking rings or squares. It may be added that this system is capable of a great variety of designs, and is not confined to the two which are illustrated on this page. The inlaid tiles may be of any color which can be given to rubber, and it is anticipated by the inventor that the system will find favor by reason of the variety of ornamental designs possible to be obtained. Special border designs may be produced, forming a contrast, either in color or figure, to the center of the floor covering. Other advantages claimed are that this new tile is impervious to water and that, in case of injury to any section, it may be removed readily for the substitution of new pieces. It is understood that the inventor is open to consider propositions from manufacturers.

INDIA-RUBBER INSULATING GLOVES.

TOWARD the end of last year the Association of French Manufacturers for Prevention of Accidents in Factories invited an international competition for the best insulating gloves, to be used by workmen in electrical works and stations. Such gloves were not only to be an effective protection for the hands and the lower part of the arms, but also to be so strong that they would resist an electric current and prevent any accidental in-

jury, as from a jagged copper wire, etc. In addition, they should be easy to wear and allow full movement of the fingers while working. A prize of 1000 francs was offered, and after a comparison of a number of samples, it was awarded to Franz Clouth, Rheinische Gummiwaarenfabrik, G. m. b. H., of Cologne, Germany. The prize glove is seamless, with a perfectly smooth surface, and no joint or projecting edge or border.

They are lined with a solid double texture, to allow of free perspiration. The thick layer of rubber used resists a current of 10,000 volts. The gloves are made with and without separate fingers, and with gauntlets of varying lengths, or without gauntlets. The price of Size No. 3, of best Pará rubber, Jersey lined, without gauntlets, is quoted in England at 12s. 6d. (= \$3) per pair. With gauntlets 18 inches long, 21s. 3d., and there are intermediate prices, including lower rates for unlined gloves. A special catalogue of these gloves is issued by the Cologne firm.

GORRIEN'S PORTABLE SHOWER BATH.

OF the two accompanying illustrations, one shows the complete article described in the above heading, and the other how it is used. The idea of a rubber ring shower bath attachment, to be used in this manner is not new; the novelty in this case,



however, consists in the attachment of the spray ring to a water bag, the nature of which combination is fully shown in the engravings. In order that the device may be of the utmost possible value in the household, the whole is so constructed that the spray ring may be detached, and replaced with any of the several pipes also shown in the larger picture. Or, all the

attachments may be removed, and the bag used for a hot water bottle. The utility of this bathing arrangement is expected to appeal especially to persons traveling, and thereby liable to find themselves without convenient bathing facilities. But it has many advantages even at home, one of which is that with its aid ladies can take a shower bath without disarranging or wetting the hair. [Gorrien's Portable Shower Bath Co., Minneapolis, Minnesota.]

OBITUARY NOTES.

JAMES FREEMAN BROWN, of New York, the sad news of whose death was recently reported in the daily papers, was a gentleman well known to the rubber trade. For many years he had handled fabrics very largely and was known as a conservative and successful business man. Personally, he was a man of unimpeachable integrity and of singular uprightness in everything. He was related by marriage to Mr. George A. Alden, of Boston. Mr. Brown was 38 years old and a native of Brookline, Mass. He was a member of the Calumet and Merchants' clubs of New York.

=Mr. Chauncey Howard White, a director in the Seamless Rubber Co. (New Haven, Conn.), aged 45, died suddenly August 25, at a summer resort near Waterbury, Connecticut.

=Mr. Chauncey M. Warren, of Bridgeport, Connecticut, died at Middletown on August 31. He was long prominent in business and political affairs in Connecticut, and for ten years was confidential agent and secretary for Ratcliff Hicks, of the Canfield Rubber Co. For several years past, however, he had been incapacitated for business by ill health.

=The many friends of Mr. Fred. E. Ranney, of the Akron Commercial Co. (Akron, Ohio), will sympathize with him in his recent bereavement, in the death of his wife, which occurred September 8. Mrs. Ranney had been an invalid for eighteen years past. Just prior to her death she had gone to a hospital for special care, and it appeared that she might recover. Her death was sudden and came as a great shock to her husband and friends.

THE Business Men's Club of Memphis, Tennessee, met on September 17 and passed resolutions of regret and sympathy at the death of President McKinley, which were ordered to be engrossed and bound in black morocco and sent to Mrs. McKinley. It was the Business Men's Club that invited Mr. and Mrs. McKinley to Memphis last May and entertained them while there. Mr. H. N. Towner, the senior member of the rubber jobbing firm of Towner & Co., and secretary of the club, was one of the committee which prepared the resolutions.

NEW CABLE INJURED.—A press dispatch from Port Townsend, Washington, dated September 25, says: "The passengers returning on the steamer *Oregon* report that the cable between St. Michael and Cape Nome is a failure. In several places the ice has cut the cable. It has been ascertained that there are nine breaks. The gap was supplied with a new cable, but it has been so badly damaged as to be practically worthless."

"CAOUTCHOUC" BECOMES SLANG.—Speaking of rubber, an American in Montreal recently couldn't at first imagine what the people up there meant by saying "caoutchouc" on every possible occasion. They at length explained to him that it was French-Canadian for "rubberneck." The American admitted that it was the neatest of translations; quite in line with the Boston infant prodigy who can say "rubberneck" in seven different languages.—*New York Evening Sun*.

RUBBER SHOES INDISPENSABLE.—"The maker of fine shoes will probably tell you," said a shoe dealer, "that rubber overshoes have gone out of style, and that no well-dressed man or woman wears them nowadays. Well, from his point of view the man is right. His customers have substituted extra heavy and cork-soled shoes, and inasmuch as the people do not tramp about the streets much in rain, snow, and slush, the heavy shoes are a good substitute. Even the people who tramp over a golf course in bad weather rarely think of wearing rubber shoes, and many who would like to do so fear that their friends would ridicule them if they did, and so get their feet damp and grin and bear it. These people all have many pairs of shoes at home, and can well afford to sneer at the people who wear 'gums.' But the general public has only one pair of shoes apiece, and that pair must be kept dry; and for that reason more rubber shoes are sold now than ever before, although shoes are made heavier than ever, and the demand for 'water-proof' goods is increasing every day."—*St. Louis Star*.

SPECIMENS of crude rubber from Mexico are shown at the Pan American Exposition, at Buffalo, in the exhibit by that republic in the forestry building, by the following:

Barron Forbes & Co., Tepic, state of Tepic.

I. Camacho, Las Conchas, Chiapas.

Government of Chiapas, Tuxtla-Gutierrez, Chiapas.

Government of Tabasco, San Juan Bautista, Tabasco.

Ramos Hermanos, City of Mexico.

L. Robles, Sinacomitlan, Colima.

Several of these exhibitors, and also others, display specimens of Chicle.

ECUADOR exported, during 1900, 1,103,511 pounds of India-rubber, valued at 1,076,068 sucres (=about \$460,000, gold). These figures are larger than the average for a good many years past. The exports from Guayaquil in 1876 reached 1,013,000 pounds, after which there was a heavy falling off, only 380,300 pounds having been exported in 1893. A recent visitor to THE INDIA RUBBER WORLD offices is about to begin, in company with some other Americans, the planting of *Castilloa elastica* rubber near Guayaquil.

THE rubber hand stamp trade of Westfield, Massachusetts, has been "put on its feet," according to the *Huntington Herald*. "For many years back the rubber stamp trade in town has been handled in an indefinite sort of way by persons having no headquarters, and consequently hard to find." But now rubber stamps are made there boldly, and without any attempt at concealment, and the stamp makers are not lynched.

THE estate of the late William Erskine Bartlett, managing director of the North British Rubber Co. (Edinburgh, Scotland), amounted to £51,795 (= \$258,975). Mr. Bartlett was a native of Massachusetts, and remained a citizen of the United States throughout his life.

THE directors of the Vereinigte Gummi-Waaren-Fabriken, Harburg-Vienna, will recommend, at the meeting of the company on October 26, a dividend for the year of 20 per cent., against 17½ per cent. last year and 12 per cent. the year before.

A NEW edition of the New England Rubber Club's list of officers and members has been issued, giving the names and addresses and business connections of 116 members.

AT public auction in New York on September 25, there were sold 1609 shares of stock in the Manáos (Brazil) Railway Co., for \$1609 for the lot.

NEWS OF THE AMERICAN RUBBER TRADE.

RUBBER GOODS MANUFACTURING CO.

THE directors at a meeting in New York on Sept. 5, declared the regular quarterly dividend (No. 10) of 1¼ per cent. on the preferred stock, out of the earnings, payable Sept. 16 to shareholders of record on Sept. 7. After the meeting a statement was made to the press representatives, reporting this action, and adding: "The common stock dividend will come up in the regular course at the meeting of the directors the first week in October." It had generally been expected that a common stock dividend would be declared at the September meeting. Dividends at the rate of 7 per cent. per year have been paid on the preferred stock regularly since June 15, 1899. The first common stock dividend, of 1 per cent. was paid July 16, 1900, and dividends at the same rate declared quarterly up to and including that paid on July 15, 1901.

RECLAIMING WORKS AT BURLINGTON.

THE New Century Rubber Co., the incorporation of which has already been mentioned in THE INDIA RUBBER WORLD, appear this month as advertisers, and are now in an excellent position to fill orders of any size. The company manufacture reclaimed rubber by a new and secret process, their claim being that their goods are absolutely free from ingredients that are in any way harmful to the manufacture of rubber goods, and that their rubber is superior in quality and texture to ordinary reclaimed stock. The company in order to introduce their goods are willing to send sample lots for trial to any manufacturer without charge. The offices of the company are in the Drexel building, Philadelphia, the works being at Burlington, New Jersey. The company's officers are: W. E. Sharps, president; J. J. Mulconroy, vice-president; and C. W. Gouert, secretary and treasurer.

GUARANTEE RUBBER CO. (AKRON, OHIO)

THIS company succeeds the Betzler & Wilson Rubber Co., manufacturers of soft rubber specialties and also of the Betzler & Wilson fountain pens. The officers of the new company, which is not a corporation, are: *Oakley C. Herrick*, formerly of the Herrick & Sons Co., of Akron, president and treasurer; *T. M. Gregory*, for nineteen years with the Akron Rubber Works, secretary and manager; *R. T. Griffith*, for nine years with the Akron Rubber Works, vice-president and assistant manager. A new factory has been equipped by the company, in South street, in which work was begun during the last month. They will manufacture soft rubber goods, including druggists' sundries.

RUBBER SCRAP IN SWEDEN AND NORWAY.

THE INDIA RUBBER WORLD has received an inquiry, through an official channel, from Sweden and Norway, for information regarding the market for rubber scrap, particularly old shoes. There are four rubber shoe factories in the countries named, and doubtless a considerable amount of scrap will ultimately be collected there. Germany last year imported over 500 tons of such material from Sweden and Norway, and now an outlet is sought in this country.

HARTFORD RUBBER WORKS EXTENSION.

THIS company has purchased a tract of land, opposite its plant on Bartholomew avenue, Hartford, having a frontage of 785 feet on the avenue, 400 feet on Park street, and about 1000 feet on Park river. It is understood to be the purpose of the

company to erect on the property a substantial addition to its plant. An old residence on the property has been under lease for some years by the company for a tire repair shop.

HARTFORD RUBBER WORKS CONFERENCE.

THE annual conference of branch house managers and salesmen of the Hartford Rubber Works Co. with the officers of the company was held in Hartford during the last week in August, ending with a dinner at Lake Compounce on the afternoon of August 29. The managers in attendance were:

E. R. Benson, Boston.	D. L. Scoville, Washington.
W. B. Fewell, Philadelphia.	F. P. Hoy, Minneapolis.
E. H. Brandt, New York.	M. J. Tansey, San Francisco.
A. H. Scoville, Cleveland.	F. H. Ayers, New York uptown.
E. E. McMaster, Detroit.	B. Brandt, Denver.
James How, Buffalo.	P. B. Kavanaugh, Chicago.

Twenty salesmen were present. J. C. Wilson, who lately resigned as secretary of the company to become connected with the Seamless Rubber Co. (New Haven), was also present at the dinner, during which he was the recipient of a handsome gold watch and chain from his friends in the company officers and employes.

RUBBER BELTING FOR AN ELEVATOR.

THE contract for equipment of the new Grand Trunk grain elevator, at Portland, Maine, with capacity of 1,500,000 bushels, embraces the following items of rubber belting:

14 each	375' long	22" wide	5 ply	32 oz.	duck.
7 "	107' "	30" "	5 "	30 "	"
2 "	592' "	36" "	4 "	32 "	"

—and one belt each of these lengths, all 36" wide, 4 ply, 32 oz. duck: 552' 578' 353' 376' 596' 1122' 1130' 1152' 1245'

The total length is 12,287 feet, or about 2½ miles. The superficial area is 30,271¼ feet. These details are supplied by the John S. Metcalf Co. (Chicago), engineers for the construction of the elevator.

STANDARD RUBBER AND OILCLOTH CO.

THIS new company, now operating the plant of the old Standard Rubber Co. (Campello, Mass.) purpose making a line of oilskin coats, for motormen, conductors, fishermen, and others who are obliged to work out of doors, regardless of the weather.

A NEW HARD RUBBER PLANT.

THE Joseph Stokes Rubber Co. (Trenton, N. J.), after some months of preparation and the installation of up-to-date machinery, are now prepared to manufacture a full line of hard rubber, with the exception, perhaps, of combs. Their vulcanite department is under the supervision of an expert and the goods already turned out are of the best grade.

THEFT OF CRUDE RUBBER.

RECENTLY some crude rubber was offered for sale to Reimers & Co., importers, at No. 67 Pine street, New York, which appeared to Mr. Reimers very much like some rubber which he had acquired through the ordinary channels of trade, and should then be lying in a bonded warehouse in Brooklyn. Mr. Reimers called upon the proprietor of the warehouse, and found a considerable quantity of rubber missing, whereupon detectives were called in, and several arrests were made, of truckmen and junkmen. The warehouse had been entered through a courtyard in the rear, and rubber removed to the estimated value of \$9600. The prisoners were held in \$2000 bail each.

PENNSYLVANIA RUBBER CO.

THIS company is planning an important extension of its factory (at Erie, Pennsylvania), involving additional buildings and an important increase in the equipment of machinery. It is reported that the Farrel Foundry and Machine Co. are constructing for the company the largest belt press ever made.—Mr. John W. Teller has joined the Pennsylvania Rubber Co. as their sales manager, for the mechanical goods department, with headquarters at No. 127 Duane street, New York. Mr. Teller became connected with the rubber trade fourteen years ago, and when Messrs. Hardy and Miller went from Boston to Akron, Ohio, to take charge of the Diamond Rubber Co., he accompanied them. Later he had charge of the company's sales in New York and in time became secretary and treasurer of the Diamond Belting and Packing Co., which position he resigns to form the new connection noted above.

TO BUILD A PACIFIC CABLE.

THE Commercial Pacific Cable Co. was incorporated under New York laws, on September 23, with a preliminary capitalization of \$100,000. The incorporation papers state that the company is to connect New York city with San Francisco by its own or other telegraph lines, thence to run from California under the Pacific Ocean to Hawaii, the Philippines and other Pacific islands. The directors are John W. Mackay, of Virginia City; Clarence Mackay, of Roslyn; George G. Ward, Albert Beck and William W. Cook, of New York city, and Albert B. Chandler and Edward C. Platt, of Brooklyn. It is stated that the company intends to have a cable at work between California and the Hawaiian islands—a distance of 2200 miles—within nine months. Application has been made for landing rights in California, Hawaii, and the Philippines. The new company does not ask any subsidy or any guaranty, hence the reason for believing there will be no trouble in agreeing with the government on the terms and conditions upon which the cable will be landed. The plan is to connect, at Manila, with the cable system now working between that port and China and Japan.

THE B. F. STURTEVANT CO. (BOSTON.)

THIS company has upon the press a very complete catalogue of its motors, generators, and generating sets. Previous publications have been in the form of bulletins descriptive of special types. This catalogue will present them all, and will in some degree reveal the fact that although the Sturtevant company has a world wide reputation as blower manufacturers, its business is by no means limited to the production of these useful machines, but that it is also equipped with a more complete line of engine and motor designs in small and medium sizes, than any other concern in the country.

CANADIAN RUBBER SHOE JOBBERS.

THE Montreal members of the Rubber Boot and Shoe Jobbers' Association recently tendered a dinner to the jobbers who were in the city at the time, visiting the factories with a view to placing their orders for the winter. The *Shoe and Leather Journal* reports the affair to have been so successful that it is now proposed to make it an annual feature.

PEQUANOC RUBBER CO. (BUTLER, N. J.)

THIS new company, the incorporation of which, with \$60,000 capital, was reported in our issue for July 1, are getting their new reclaiming factory in good shape and expect to submit samples of their new product to the trade towards the middle or last of October, and promise to make a formal announcement of the opening of their new business in a few weeks. They promise the most reliable grades of reclaimed rubber in the market.

AN AMERICAN CONCERN IN ENGLAND.

A WRITER in the London *India-Rubber Journal* says: "I have had a number of inquiries respecting the North-Western Rubber Co., Limited, of Litherland, Liverpool, and understand that this is an American company who have secured the land, and are building large works close to the canal at Seaforth. The intentions of the directors are not at present disclosed, but I learn that their first object is the manufacture of reclaimed rubber on a new process, whereby all trace of sulphur is removed."—The incorporation of the company referred to was recorded in THE INDIA RUBBER WORLD of June 1 last [page 278.]

UNITED STATES RUBBER CO.

DURING the past month a circular letter to jobbers was issued by this company, announcing that the contract system now in force will be continued to January 1, 1903, and that "a policy of low prices" will also be continued. The circular also announces a slightly lower rate of discounts to jobbers, beginning January 1, next.

NEW INCORPORATIONS.

THE Ball Manufacturing Co. (Camden, N. J.), August 22, under New Jersey laws, to make rubber goods; capital, \$25,000, of which \$1000 paid in.

=The American Rubber Works Co., September 10, under New Jersey laws; capital, \$1,000,000. Incorporators: G. N. Huntington, L. S. McGrehan and John W. Wilcox—registered addresses, East Orange, New Jersey, in the office of the New Jersey Registration and Trust Co. The object is to purchase and own patents for tires and to manufacture the same.

=Woven Wire Rubber Horseshoe Co., September 1, under Iowa laws, to manufacture a new horseshoe of wire and rubber, invented by Charles Olson; capital, \$100,000. Incorporators: H. E. Jones, J. T. Hume, E. E. Shirk, Miles Sprague.

TRADE NEWS NOTES.

THE United States Rubber Reclaiming Works, owing to pressure of business, will either add to their factory equipment by installing a new plant at some convenient point, or will add to the present plants at Shelton, Connecticut, and Jersey City, New Jersey.

=Mr. Robert B. Baird has established himself as a broker in crude India-rubber, his New York office being No. 253 Broadway, and his Boston office No. 161 Summer street.

=The Hodgman Rubber Co. (New York) are distributing an illustrated folder, showing some new styles of their "Alexombric" storm coats, which is an artistic bit of advertising, apart from the fact that the styles shown are uncommonly attractive.

=The Seamless Rubber Co. (New Haven) have filed with the secretary of state of Connecticut a notice of an increase of capital stock from \$130,000 to not exceeding \$250,000.

=The Maple Leaf Rubber Co., Limited, rubber shoe manufacturers, of Toronto, Ontario, have increased their capital from \$250,000 to \$350,000.

=Work was resumed in the "Alice" mill of the Woonsocket Rubber Co. on September 16, after a shutdown dating from August 3. Work was resumed in the shoe department of the National India Rubber Co. on September 23, after a shutdown dating from the same period.

PERSONAL MENTION.

DR. CHARLES MCBURNEY, of New York, who was one of the physicians in attendance upon President McKinley at Buffalo, is a son of the late Charles McBurney, one of the early proprietors of the Boston Belting Co. He is one of the most eminent of American surgeons and his reputation is world wide.

=Mr. Thomas Knight, traveling representative for L'Horti-

cale Coloniale, of Brussels—one of the great horticultural establishments of the world, and one which is contributing in an important degree to the development of the rubber planting interest—has favored THE INDIA RUBBER WORLD recently with a call.

=The name of Mr. Charles R. Flint having been suggested, through the newspapers, as that of a suitable candidate for mayor of New York, to head the movement to reform the city government, that gentleman wrote to the committee of citizens having in charge the choice of a candidate that his business interests were of such a nature that he could not undertake the cares of public office.

=The Editor of THE INDIA RUBBER WORLD is constrained to apologize for the picture of Treasurer G. P. Whitmore, of the New England Rubber Club, which appeared in the September issue of the paper. Personally, Mr. Whitmore is one of the most genial men alive, and the amount of detail work that he has done in connection with the Club is marvelous. The photograph, however, has pictured him as a serious individual, with a suggestion of pugnacious intolerance. Whether this was due to the sun, the photographer, or the repentant mood that follows successful dinners, it is impossible to state, but at all events, the photograph was not a likeness.

=Mr. H. C. Burton, of Parker, Stearns & Sutton, New York, has gone to Europe and will probably remain away for some

two months. Mr. Burton, always an exceedingly conscientious man, has allowed himself to overwork and the powers that be in the company have, with kindly insistence, decided that he take a vacation where no news of the factory and office can reach him.

=Mr. Louis M. L. Gielis, director of the Cie. Commerciale des Colonies (Société Anonyme), of Antwerp, while on a visit recently to the United States in the interests of his company—who, by the way, are interested in the exploitation of rubber in Africa and Brazil—was a visitor to the offices of THE INDIA RUBBER WORLD.

=Mr. A. G. Morganstern, formerly of the firm of Lowenthal & Morganstern, and for some years past a resident of Europe, is now visiting in the United States. Mr. Morganstern, by the way, since he retired from business, has become a tennis expert of note. He is acting secretary of the Nice Lawn Tennis Club and one of the best players in Europe.

=Herr Kuhlemann, manager of Oesterrichisch-Amerikanische Gummifabrik, of Vienna, one of the largest continental rubber factories, who planned to be in the United States this fall, advises THE INDIA RUBBER WORLD that pressure of business makes it impossible for him to reach the States before the early spring.

=Baron H. Arnous de Rivière, of Beni Gum Co. fame, is again in Bolivia, trying to develop some rubber interests there.

REVIEW OF THE CRUDE RUBBER MARKET.

THE general tendency of prices during the past month has been slightly downward, ending in a level 2 or 3 points lower than in our last report, with a smaller decline in some others. Pará rubber has been arriving in the primary markets at a very good rate, but the principal receipts so far this season have resulted from last season's collections. Hence, it is too early to determine the effect upon the production of rubber of the depression in the rubber states of which so many rumors have come to hand. Judging by past experience, it will be well on into next year before the total production of the current season can be known. Manufacturers have bought rather freely during the latter part of the month just closed.

New York quotations on September 30 were:

PARÁ.		AFRICAN.	
Islands, fine, new....	85 @56	Tongues.....	46 @47
Islands, fine, old....	87 @88	Sierra Leone.....	47 @65
Upriver, fine, new....	89 @90	Benguella.	53 @54
Upriver, fine, old....	90 @91	Cameroon ball.....	46 @47
Islands, coarse, new....	47 @48	Flake and lumps.....	33 @35
Islands, coarse, old....	@	Accra flake.....	17 @18
Upriver, coarse, new....	64 @65	Accra buttons.....	46 @47
Upriver, coarse, old....	66 @67	Accra strips.....	@
Caucho (Peruvian) sheet	53 @54	Lagos buttons.....	45 @46
Caucho (Peruvian) ball	64 @65	Lagos strips.....	@
CENTRALS.		Madagascar, pinky....	@
Esmeralda, sausage....	54 @55	Madagascar, black....	@
Guayaquil, strip.....	50 @51	EAST INDIAN.	
Nicaragua, scrap....	53 @54	Assam.....	60 @61
Mangabeira, sheet....	40 @41	Borneo.....	36 @46

Late Pará cables quote:

	Per Kilo.		Per Kilo
Islands, fine.	6\$000	Upriver, fine.....	7\$000
Islands, coarse	2\$700	Upriver, coarse.....	4\$400
Exchange 10 $\frac{1}{2}$ d.			

The latest mail advices from Pará are to the effect that the Islands rubber crop is promising well, as an offset to the shortage expected in the Upriver supplies. Caucho receipts thus far have been slight.

NEW YORK RUBBER PRICES FOR JULY (NEW RUBBER.)

	1901.	1900.	1899.
Upriver, fine.....	84@87½	93@97	99@1.02
Upriver, coarse.....	61@63	67@71	78@80
Islands, fine.....	82@85	87@93½	95@98
Islands, coarse.....	46½@48½	51@54	64@66
Camatá, coarse.....	50@55	54½@59	64@68

NEW YORK RUBBER PRICES FOR AUGUST (NEW RUBBER.)

	1901.	1900.	1899.
Upriver, fine.....	85@92	93@99	100@103
Upriver, coarse.....	61@68	68@71	77@79
Islands, fine.....	81@98	88@97	95@97
Islands, coarse.....	46@50	55@58	62@66
Camatá, coarse.....	50@51	55@59	62½@66

Bordeaux.

TO THE EDITOR OF THE INDIA RUBBER WORLD: During the first days of September there has been a slight advance in Caoutchouc in this market, with a good demand. Quotations —francs per kilogram:

Soudan twists, fine....	6.8c@7.	Cameroons, B... ..	3.60
Do ordinary..6.	@6.05	Do C.....	3.
Soudan niggers, fine....	6.50@6.75	Grand Bassam, lump..	5.
Do ordinary..5.	@6.	Do niggers 5.8c@6.	
Cameroons, A. P.	6.80	Tonkin, red	5.50@5.75
Do A....	5.35	Do black.....	5.75@6.
Do A. M.....	4.60		

Arrivals since September 1:

Soudan twists.....kilos	37,550	Grand Bassam, niggers...	300
Soudan niggers.....	2,650	New Caledonian.....	1,500
Grand Bassam, lump....	1,000	Soudan, 279 bags.	

Stocks, September 16:

Soudan.....kilos	10,000	Quito (Ecuador).....	2,500
Cassamance.....	5,000	Madagascar.....	3,000
Java.....	3,500		
Tonkin.....	2,200	Total.....	30,700
Congo-Mayambe.....	4,500		

Bordeaux, September 16, 1901.

P. CHAUMEL

* * *

IN regard to the financial situation, Albert B. Beers (broker in India-rubber, No. 58 William street, New York), advises us follows:

"During September there has been only a moderate demand for commercial paper, and rates have advanced somewhat, as is usual at this season, quotations being 5@5½ per cent. for the best rubber names and 6 per cent. for those not so well known, and but small demand for the latter."

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.					
	Fine and Medium.	Coarse.	Total 1901.	Total 1900.	Total 1899.
Stocks, July 31.....tons	634	90 =	724	498	351
Arrivals, August... ..	293	171 =	464	599	526
Aggregating.....	927	261 =	1188	1097	877
Deliveries, August.....	442	223 =	665	531	564
Stocks, August 31....	485	38 =	523	566	313

PARÁ.			ENGLAND.			
1901.	1900.	1899.	1901.	1900.	1899.	
Stocks, July 31.....	215	370	260	930	1500	670
Arrivals, August.....	1190	1200	1010	750	425	1245
Aggregating.....	1405	1570	1270	1680	1925	1915
Deliveries, August....	1215	1315	575	700	725	1560
Stocks, August 31	190	255	695	980	1200	355

	1901.	1900.	1899.
World's supply, August 31.....	2238	2629	1697
Pará receipts, July 1 to August 31.....	2305	1197	2295
Pará receipts of Caucho, same date.....	250		
Afloat from Pará to United States, Aug. 31.	87	170	185
Afloat from Pará to Europe, August 31.....	458	345	420

Pontianak.

EXPORTS from Singapore for two years past have been as follows, in pounds:

YEARS.	Great Britain.	Other Europe.	United States.	Total.
1900.....	2,924,666	778,133	7,755,866	11,458,666
1899.....	336,933	551,866	9,998,266	10,887,066

Liverpool.

WILLIAM WRIGHT & CO. report [September 1]: "Fine Pará.—There has been a more active inquiry during the month; prices advanced from 3s. 7d. to 3s. 10d., but since then have receded somewhat, closing quotation being 3s. 9d. The decline is entirely due to the action of the American 'bear' operator, and is not justified by the position of the market, which statistically is strong. There seems to be a general consensus of opinion that the crop will be a short one; to what extent, and whether this will become apparent at the beginning or the end of the crop, remains to be seen; up to date supplies are up to last year. We understand the state of Amazonas are going to impose an extra duty of 2 per cent., which will, of course, add to the price. Taking into account the uncertainties of the situation, and the fact that the prices are 5d. per pound lower than last year, we think manufacturers should not run too short."

Marius & Levy report [September 14]: "We lately saw an advance on prices, which is only the prelude of what we are going to see very shortly. We may anticipate a squeeze again. The news that a liner trading between Manáos, Pará, and Liverpool was stranded, caused considerable uneasiness among a certain class of operators here. We wonder what would happen if a steamer sank, with a few hundred tons on board."

"The statistical position is strong. The Islands crop has begun, but Upriver districts, so far, have not shown many signs of life. Upriver grades will become very scarce, and it is now a question whether prices for Islands will rule on the same level as Upriver fine, or whether this latter will command a premium of 2 or 3 pence."

"The latest news from Peru we had informed us that Caucho

slab next crop will be scarce, as well as Caucho ball, for the simple reason that each tree gathered for is killed, and the growth of a *Castilloa* requires years and years.

"Many steamers are lying idle in Pará, and will not be seen busy for a long time to come, because they require cargo, both inwards and outwards. It does not pay to send a steamer empty from Manáos or Pará to the rivers, the journey taking sometimes 40 or 50 days going upriver and 30 to 40 days coming down."

"We point out something very curious:

Fine Pará Upriver 3/9 this year against 4/2½ last.

Fine Pará Islands 3/8½ this year against 4/1½ last.

—and in comparing statistics on September 1:

Pará stocks, this year... 984 tons.

Pará stocks, last year 1200 tons.

"The statistical position will be considerably strengthened during October, November and December."

London.

JACKSON & TILL, under date of September 1, report stocks:

	1901.	1900.	1899.
Pará sorts.....tons	—	—	—
Borneo.....	129	193	86
Assam and Rangoon.....	90	41	28
Other sorts.....	506	544	418
Total.....	725	778	532

	1901.	1900.	1899.
Pará.....	984	1200	703
Other sorts.....	1027	1192	753
Total, United Kingdom.....	2736	3170	1988
Total, August 1.....	2944	3645	1878
Total, July 1.....	3128	3653	2247
Total, June 1.....	3502	3624	2510
Total, May 1.....	3397	3952	2129

PRICES PAID DURING AUGUST.

	1901.	1900.	1899.
Pará fine.	3/6¼ @ 3/10½	3/11½ @ 4/2½	4/0¼ @ 4/3½
Negroheads, Islands.	1/10¼ @ 2/0½	2/2½ @ 2/3	2/7
Do scrappy.....	2/9 @ 2/9½	2/10½ @ 2/11	3/2½
Bolivian.....	3/7	4/0½ @ 4/2½	4/3 @ 4/3½

Auction, September 6: Very little sold. Nyassa sold at 2/9; Red Mozambique 3/1¼; Assam No. 1, heated, 1/9¼ @ 1/10; low sandy 0/10; ordinary heated No. 1, at 2/1¼; stickless sausage, 2/1¼ bid.

Manaos.

THE legislature of Amazonas has approved a law reducing duties on rubber to 20 per cent., of which 33 per cent. are payable in kind, and authorizing government to receive the whole in kind if necessary, as also to negotiate a loan with guarantee of the rubber received by the treasury, which it is said, will be handed over to a syndicate in Paris with which the governor is in negotiation. This has caused great sensation and the Associação Commercial has called a meeting to protest.—*The Brazilian Review*.

MARIUS & LEVY, who have houses on the Amazon and in Liverpool and Paris, advise us:

"Taking the total of rubber exported from Manáos at 16,000 tons, 20 per cent. of this will be 3200 tons, and 33 per cent. of this is equal to 1056 tons of rubber, which will be in the hands of the Amazonas state government. We reckon that not less than 1200 to 1300 tons will be quantity of rubber stored in Manáos, and it is said that this rubber will be given to a syndicate as a guarantee for a loan, which loan will be raised in Paris. The syndicate will of course try to make as much money as they can on the rubber, independently of any other advantages they may obtain on the special terms of the loan."

"Another law is now in discussion regarding the classification of rubber—i. e., fine and entrefine (medium) are to form one class of rubber, paying duty on the basis of the price of

fine; scrappy, ball, slab, and other grades paying on the basis of the price of scrappy. We must say that this proposed second law is not equitable at all and it has aroused a general protest from the merchants of Manáos."

Belgian Rubber Movement.

THE imports and exports of crude India-rubber in Belgium for 1899 were as follows:

FROM—	Kilos.	TO—	Kilos.
Congo Free State.....	3,401,059	United States.....	1,059,283
France.....	323,175	Hamburg.....	68,262
Great Britain.....	226,878	Great Britain.....	569,039
Germany.....	81,888	Germany.....	439,557
Hamburg.....	288,689	Holland.....	409,742
Portugal.....	135,740	France.....	287,259
Other Europe.....	57,617	Russia.....	211,371
Africa.....	26,421	Austria.....	108,441
East Indies.....	67,682	Spain.....	24,310
Brazil.....	62,968	Denmark.....	23,959
Other countries.....	29,273	Other countries.....	31,341
Total.....	4,701,390	Total.....	3,846,564
In transit.....	669,229	In transit.....	669,229
Grand total.....	5,370,619	Grand total.....	4,515,793
Grand total, 1898.....	3,229,952	Grand total, 1898.....	2,370,769

German Crude Rubber Imports.

QUANTITIES.			
	1900.	1899.	1898.
Imports.....pounds	29,656,440	30,148,140	22,214,940
Exports.....	10,493,340	11,889,360	5,359,860
Net imports.....	19,163,100	18,258,780	16,855,080
VALUES.			
	1900.	1899.	1898.
Imports.....marks.	75,489,000	76,741,000	45,400,000
Exports.....	21,464,000	24,340,000	8,771,000
Net imports.....	54,015,000	52,401,000	36,669,000

Rotterdam Rubber Statistics, 1900.

[Supplied by WEISS & Co.]

INDIA-RUBBER ARRIVALS (KILOGRAMS.)			
Thimbles, red.....	123,400	Java and Sumatra.....	43,200
Thimbles, black.....	15,650	Borneo.....	10,300
Congo ball.....	16,500	All other.....	6,800
Kassai, red.....	127,200	Total, 1900.....	877,450
Kassai, black.....	22,500	Total, 1899.....	804,750
Upper Congo.....	471,900	Total, 1898.....	656,400
Sierra Leone.....	11,100	Total, 1897.....	705,650
Mozambique.....	28,900		

	1901.	1900.	1899.	1898.
Stocks, January 1.....	80,600	38,900	36,100	80,200

BALATA ARRIVALS (KILOGRAMS.)			
	1900.	1899.	1898.
Surinam sheet.....	161,600	95,250	76,800
Venezuela block.....	23,500	52,200	158,800
Total.....	185,100	147,450	236,600
Stocks, end year.....		5,000	60,000

GUTTA-PERCHA (TONS.)			
	1900.	1899.	1898.
Stocks beginning of year.....	307	180	130
Arrivals during year.....	280	495	265
Aggregating.....	587	675	395
Sales during year.....	402	368	215
Stocks end of year.....	185	307	180

Hamburg.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The transactions during the past week in the Hamburg market continued firm for Pará sorts, with active inquiries. Sales of medium quantities of fine Pará and Bolivian spot, were made

at 8.40@8.45 marks; for future delivery higher prices were offered, but found no sellers. Scrappy Manáos, quiet, with minor transactions at 5.80@5.85 marks. Transactions in fine Mollendo were dull at 8.05@8.10 marks for new importations, and at 8.20@8.25 marks for old, dry rubber. Negroheads received no offers worth mentioning. Orinoco [Angostura] received especial attention, and, as the importers were inclined to grant concessions, transactions were brisk for spot and delivery, prices ranging for fine between 7.95@8 marks; for medium between 7.80@7.90; and for Negroheads between 5.60@5.80. The transactions in middle sorts [Africans and Centrals] were of minor importance, at weak prices, excluding the necessity of their detail. The following sorts were taken out of the market:

Mozambique balls, red, finest.....	M.	7.70@7.75
Do Do Do fine.....		7.35@7.40
Do Do Do good.....		6.65@6.60
Do spindles, prime.....		6.50@6.60
Do Do second.....		3.40@3.50
Bissao balls, fine.....		5.40@5.50
Do Do good.....		4.80@4.90
Do Do Sandy.....		3.50@3.60
Colombian scrap, fine.....		5.75@5.80
Colombian sheets, fine.....		4.50@4.55

Hamburg, September 11, 1901.

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The steamer *Philippeville* arrived on the 7th instant from the Congo, with 810 tons of rubber, which is the largest quantity shipped by one steamer up to date. [The details follow, under another heading.]

The next sales by inscription will take place on the 24th instant, when 475 tons will be exposed. The principal Congo sorts are represented by big lots:

33 tons Upper Congo balls.....	valuation	f 7.15
40 tons Upper Congo balls.....		f 6.50
47 tons Upper Congo strips.....		f 6.50
23 tons Lower Congo red thimbles.....		f 3.
29 tons Lower Congo red thimbles.....		f 2.75
26 tons Aruwimi.....		f 6.
17 tons Lake Leopold II.....		f 4.75
15 tons Isanghi.....		f 5.50

The demand has been regular of late; in the week from September 2-7, about 85 tons have been sold at steady prices for good qualities and somewhat irregular prices for inferior and badly conditioned qualities.

C. SCHMID & CO.

Antwerp, September 10, 1901.

ANTWERP RUBBER STATISTICS FOR AUGUST.

DETAILS.	1901.	1900.	1899.	1898.	1897.
Stock, July 31. Kilos	1,040,441	1,133,702	345,205	256,263	121,932
Arrivals in August.	286,816	498,188	299,604	108,737	194,193
Congo sorts.....	267,039	385,738	280,838	102,973	183,536
Other sorts.....	18,877	112,450	18,766	5,764	10,657
Aggregating.....	1,327,257	1,631,890	644,809	365,000	316,125
Sales in August.....	642,902	575,766	244,377	220,474	158,847
Stocks, Aug. 31....	684,355	1,056,124	400,432	144,526	157,278
Arrivals since Jan. 1	3,838,870	4,167,418	2,395,870	1,222,948	1,064,830
Congo sorts.....	3,511,496	3,526,013	2,094,646	1,057,800	979,558
Other sorts.....	327,374	641,405	301,224	165,148	85,272
Sales since Jan. 1 ..	3,768,464	3,403,285	2,258,778	1,172,885	1,046,820

ARRIVALS AT ANTWERP.

SEPTEMBER 7.—By the <i>Philippeville</i> , from the Congo:	
Bunge & Co. (Domaine privé Etat du Congo).....	kilos 316,000
Bunge & Co. (Plantations Lacourt).....	8,400
Bunge & Co. (Société Isanghi).....	9,000
Bunge & Co. (Société Anversoise).....	37,000
Société ABIR.....	265,000

Equatoriale Congolaise.....	4,000	
M. S. Cois (Centrale Africaine).....	9,000	
M. S. Cois (Société Lubefu).....	13,000	
M. S. Cois (Produits Vegetaux du Kassal).....	26,000	
Ch. Dethier (Société Belgika).....	23,000	
Crédit Commercial Congolais (M. D'Heygere).....	3,100	
Société Coloniale Anversoise (Belge du Haut Congo).....	63,500	
Société Coloniale Anversoise (Sud Kamerun).....	600	
Société Coloniale Anversoise.....	4,100	
Société Coloniale Anversoise (Société La Djuma).....	10,900	
Comptoir Commercial Congolais.....	5,000	
Société Agricole and Commerciale de l'Alima.....	1,600	
Cie. Commerciale des Colonies (La Kassaienne).....	1,000	
Soc. Coloniale Anversoise (Cie. des Mag. Generaux).....	2,300	
Mallinckrodt & Co. (Alimaïenne).....	4,000	
M. S. Cois (Ikelemba).....	1,500	
Société pour Commerce Colonial (Est du Kwango).....	1,000	
Trafic Congolais.....	1,500	810,700

Balata.

TO THE EDITOR OF THE INDIA RUBBER WORLD: There has been a marked decline in the shipment of Balata from Venezuela this year. The comparison with last year follows:

	1900.	1901.
January to July.....pounds	1,210,700	592,031
August.....	229,466	274,085

Total..... 1,440,166 866,116

One cause of this decrease was the prolonged and very severe drought, which delayed the opening of the present season for collecting Balata. Generally this work begins in April, but this year nothing was done before the last days of June. The shipments early in the year included a lot of last year's crop which was retained by the holders, hoping for better prices. There are now many people at work in the Balata districts, and it may be that the total shipment for the year may

be only a little smaller than last year, if the remainder of the season should prove favorable, and there is no great political trouble. Last year's export of Balata reached 2,628,784 pounds.

Cuidad Bolivar, Venezuela, August 27, 1901.

O. E.

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

August 29.—By the steamer *Cametense*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	40,000	20,500	105,300	2,500=	168,300
Reimers & Co.	81,300	26,500	36,900	1,300=	146,000
Crude Rubber Co.	89,200	10,300	14,100	400=	114,000
A. T. Morse & Co.	32,000	8,900	54,100	1,500=	96,500
Joseph Banigan Rubber Co	18,500	4,000	3,700	.....=	26,200

Total..... 261,000 70,200 214,100 5,700= 551,000

September 6.—By the steamer *Dunstan*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
Crude Rubber Co.	35,300	4,700	16,500	.....=	56,500
Boston Rubber Shoe Co.	15,200	3,900	20,700	.....=	39,800
Reimers & Co.	19,600	3,900	11,800	.....=	35,300
New York Commercial Co.	5,500	700	23,100	.....=	29,300
A. T. Morse & Co.	1,300	5,000	13,600	.....=	19,900

Total..... 76,900 18,200 85,700= 180,800

September 16.—By the steamer *Hildebrand*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
Crude Rubber Co.	258,700	42,000	40,700	.....=	341,400
Reimers & Co.	201,900	49,600	45,300	600=	297,400
New York Commercial Co.	23,000	5,500	45,800	35,100=	109,400
A. T. Morse & Co.	12,800	1,300	53,000	3,800=	70,900
Boston Rubber Shoe Co.	34,200	3,700	5,600	.....=	43,500
Joseph Banigan Rubber Co	18,100	700	2,200	.....=	21,000
G. Amsinck & Co.	14,500	.....	.....	.....=	14,500
Hagemeyer & Brunn	10,000	400	1,300	.....=	11,700
Lawrence Johnson & Co.	2,400	.....	.....	.....=	2,400

Total..... 575,600 103,200 103,900 39,500= 912,200

[NOTE.—The *Grangene*, from Pará, with 270 tons of rubber, was due at New York, on September 30.]

PARA RUBBER VIA EUROPE.

AUG. 29.—By the <i>Graf Waldersee</i> =Hamburg:	
Crude Rubber Co. (Caucho).....	19,000
A. T. Morse & Co. (Caucho).....	7,000 26,000
SEPT. 3.—By the <i>Campania</i> =Liverpool:	
Reimers & Co. (Coarse).....	20,000
SEPT. 4.—By the <i>Majestic</i> =Liverpool:	
Crude Rubber Co. (Caucho).....	40,000
George A. Alden & Co. (Caucho).....	22,500
Reimers & Co. (Coarse).....	18,000 80,000
SEPT. 7.—By the <i>Bulgaria</i> =Hamburg:	
Crude Rubber Co. (Coarse).....	16,000
SEPT. 9.—By the <i>Umbria</i> =Liverpool:	
Reimers & Co. (Fine).....	11,500
Reimers & Co. (Coarse).....	4,500
Reimers & Co. (Caucho).....	56,500
Robinson & Tallman (Coarse).....	9,000
Robinson & Tallman (Caucho).....	3,500
George A. Alden & Co. (Caucho).....	11,000
Crude Rubber Co. (Caucho).....	11,000 106,000
SEPT. 11.—By the <i>Oceanic</i> =Liverpool:	
A. T. Morse & Co. (Caucho).....	17,500
Reimers & Co. (Caucho).....	22,500
SEPT. 20.—By the <i>Teutonic</i> =Liverpool:	
A. T. Morse & Co. (Caucho).....	16,000
SEPT. 23.—By the <i>Etruria</i> =Liverpool:	
A. T. Morse & Co. (Caucho).....	23,000

OTHER IMPORTS AT NEW YORK.**CENTRALS.**

AUG. 24.—By the <i>Buffon</i> =Bahia:	
J. H. Rossbach & Bros.....	22,500
AUG. 24.—By the <i>Philadelphia</i> =Liverpool:	
G. Amsinck & Co.....	5,500
AUG. 26.—By the <i>H. Luckenbach</i> =Colon:	
Isaac Brandon & Bros.....	4,900
Crude Rubber Co.....	2,800
G. Amsinck & Co.....	900 8,600

CENTRALS—Continued.

AUG. 26.—By Pennsylvania R. R.=New Orleans:	
G. Amsinck & Co.....	7,500
Kunhardt & Co.....	1,200
L. N. Chemedlin.....	800
H. Marquardt & Co.....	800
Lawrence Johnson & Co.....	500 10,800
AUG. 28.—By El Cid=New Orleans:	
A. T. Morse & Co.....	8,000
Eggers & Heinlein.....	2,000
For Europe.....	5,000 15,000
AUG. 26.—By the <i>Allegheny</i> =Greytown:	
A. P. Strout.....	6,500
Maltus & Ware.....	3,000
G. Amsinck & Co.....	1,200
Jimenez & Escobar.....	500
Roldan & Van Sickle.....	1,500
United Fruit Co.....	2,000
Kunhardt & Co.....	2,000
Lawrence Johnson & Co.....	1,000
D. A. De Lima & Co.....	500 18,200
AUG. 27.—By the <i>Advance</i> =Colon:	
L. N. Chemedlin.....	1,300
Flint, Eddy & Co.....	2,300
Joseph Hecht & Sons.....	900 4,500
AUG. 27.—By the <i>Prins Willem III.</i> =Trinidad:	
Thebaud Bros. (Angostura Fine).....	19,200
Thebaud Bros. (Angostura Coarse).....	8,500 27,700
AUG. 27.—By the <i>Flaxman</i> =Bahia:	
J. H. Rossbach & Bros.....	14,000
AUG. 28.—By the <i>Maracai</i> =Trinidad:	
Schultz & Ruckgaber.....	3,000
SEPT. 3.—By the <i>Alliance</i> =Colon:	
G. Amsinck & Co.....	3,800
Isaac Brandon & Bros.....	3,600
Gillespie Bros. & Co.....	800
Kunhardt & Co.....	1,200
Jimenez & Escobar.....	1,200
Lawrence Johnson & Co.....	700
Mecke & Co.....	300 11,600
SEPT. 3.—By the <i>Louisiana</i> =New Orleans:	
A. T. Morse & Co.....	3,000
A. N. Rotholz.....	2,000 5,000
SEPT. 4.—By El Sud=New Orleans:	
A. T. Morse & Co.....	2,500
Eggers & Heinlein.....	500
R. G. Barthold.....	700
R. F. Cornwell.....	1,000 4,700

CENTRALS—Continued.

SEPT. 7.—By the <i>Monterey</i> =Mexico:	
H. Marquardt & Co.....	1,500
E. Steiger & Co.....	500
For Europe.....	5,000 7,000
SEPT. 10.—By the <i>Finance</i> =Colon:	
G. Amsinck & Co.....	10,600
Hirzel, Feltman & Co.....	5,500
Isaac Brandon & Bros.....	5,400
Crude Rubber Co.....	3,500
Ascensio & Cassio.....	2,700
Dumarest & Co.....	2,700
Flint, Eddy & Co.....	2,400
Eggers & Heinlein.....	1,900
A. Santos & Co.....	1,300
Roldan & Van Sickle.....	1,000
W. R. Grace & Co.....	700
Joseph Hecht & Son.....	600
R. G. Barthold.....	300
W. Loalza & Co.....	300 38,900
SEPT. 11.—By the <i>Alena</i> =Greytown:	
A. P. Strout.....	5,500
Kunhardt & Co.....	2,500
Jimenez & Escobar.....	1,500
Maltus & Ware.....	1,000
Andreas & Co.....	500
Mecke & Co.....	700
Lawrence Johnson & Co.....	500
G. Amsinck & Co.....	100 12,300
SEPT. 13.—By the <i>Fuacan</i> =Mexico:	
H. Marquardt & Co.....	1,200
Fred. Probst & Co.....	500
E. N. Tibbals.....	300
Graham, Hinkley & Co.....	200 2,200
SEPT. 16.—By the <i>Comus</i> =New Orleans:	
A. T. Morse & Co.....	7,000
For Europe.....	1,200 8,200
SEPT. 18.—By El Dorado=New Orleans:	
A. N. Rotholz.....	3,000
Rubber Celluloid Co.....	3,000
For Europe.....	3,000 9,000
SEPT. 16.—By the <i>Orizaba</i> =Colon:	
G. Amsinck & Co.....	3,200
Lawrence Johnson & Co.....	1,500
Flint, Eddy & Co.....	1,300
Kunhardt & Co.....	500
D. A. De Lima & Co.....	500
Everett, Heaney & Co.....	500
Jos. Hecht & Son.....	200
Jimenez & Escobar.....	300
Kats & Bock.....	200
A. P. Strout.....	300 8,800

THE RUBBER TREE IS KING

OF ALL VEGETABLE PRODUCTS.

WHY?

BECAUSE ITS MILK, GATHERED AND COAGULATED INTO THE CRUDE RUBBER OF COMMERCE AT A COST OF ONLY FIVE OR SIX CENTS A POUND, IS WORTH TO-DAY, ACCORDING TO QUALITY, FROM 60c. TO \$1.00 A POUND—FROM \$1200 TO \$2000 PER TON. WHAT OTHER RAW, UNMANUFACTURED VEGETABLE PRODUCT IS WORTH ONE-THIRD AS MUCH?

WHY IS THE RUBBER TREE KING?

BECAUSE OF THE ENORMOUS DEMAND FOR RUBBER in the Arts, a demand growing so rapidly that it has practically doubled in the last six years;

BECAUSE MILLIONS OF WILD RUBBER TREES ARE DESTROYED ANNUALLY in supplying the market demand, until the remaining areas of wild rubber trees are now so remote and inaccessible from the markets of the world, and the product has become so costly to gather, that the price of crude rubber has increased more than 60 per cent. since 1894.

Is it then true, you will naturally ask, that prohibitive prices for the crude product will shortly drive rubber out of many of its present uses in the Arts? No, this is not true; on the contrary, THE GROWING OF THE RUBBER TREE IN WELL-ORDERED PLANTATIONS, in regions where the best varieties of the rubber tree are indigenous and grow wild, HAS NOW BECOME NOT ONLY A THOROUGHLY WELL ESTABLISHED AND DEMONSTRATED BUT AN ENORMOUSLY PROFITABLE INDUSTRY—INDEED IT HAS BECOME IN TRUTH THE MOST PROFITABLE INDUSTRY OF ANY FORM OF AGRICULTURAL OR HORTICULTURAL INVESTMENT.

MATURE RUBBER TREE PLANTATIONS

on the Isthmus of Tehuantepec, demonstrate that as many as 200 mature trees to the acre may be advantageously planted, and that on the seventh year after they are planted and for each of every fifty years thereafter these trees will produce from two to six pounds of net, crude rubber to the tree, worth to-day 70 cents a pound, at the Plantation. Since it costs only from 5 to 6 cents a pound to gather the milk and coagulate it into commercial crude rubber, no figures are needed to demonstrate the unusual profits this industry is to-day paying.

THE ISTHMUS RUBBER COMPANY

has 10,000 acres located near the center of the Isthmus of Tehuantepec, its lands being traversed for four miles by the National Tehuantepec Railway. Its transportation facilities are unequalled by any tropical agricultural region in the world, since it is able to ship from its own station on the Plantation to New York at the rate of $\frac{1}{2}$ cent per pound, or \$10 a ton. 7000 acres of this land are being planted in rubber at the rate of 200 trees to the acre, while on each acre so planted from 300 to 500 coffee trees are being planted, the coffee being a low shrub which thrives best in the shade and for which abundant room is had between the high branching rubber trees. The remainder of this land the Company is planting in sugar-cane, pineapples and other short crops which pay from \$200 to \$500 per acre and which, maturing within twelve to eighteen months from the date of planting, form a source of steady dividends through the period required for the rubber trees to reach maturity.

This Company is now offering certain of its

STOCK FOR SUBSCRIPTION

under conditions which place the investment within the reach of any one. No form of investment so absolutely non-speculative, may be safely relied on to pay such large dividends. If you are interested full information and various books descriptive of this particular industry and also descriptive of various profitable investments in Mexico, may be had by writing to or calling at the offices of

The Isthmus Rubber Company,

Boston Office: 318 Weld Building.

No. 29 BROADWAY, NEW YORK.

Mention The India Rubber World when you write.

CENTRALS—Continued.

SEPT. 21.—By the <i>Maracas</i> =Trinidad:	
Thebaud Brothers.....	5,500
Thebaud Brothers (Angostura Fine).....	5,100
Thebaud Bros. (Angostura Course).....	2,500
Kunhardt & Co.....	250 13,300
SEPT. 23.—By the <i>Segurana</i> =Mexico:	
Thebaud Brothers.....	4,000
Harburger & Stack.....	300
H. Marquardt & Co.....	300 4,000

AFRICANS.

AUG. 24.—By the <i>Philadelphian</i> =Liverpool:	POUNDS.
A. T. Morse & Co.....	22,500
AUG. 27.—By the <i>Southwark</i> =Antwerp:	
Reimers & Co.....	18,000
O. G. Mayer & Co.....	6,500 24,500
AUG. 29.—By the <i>Germanic</i> =Liverpool:	
Crude Rubber Co.....	62,000
AUG. 29.—By the <i>Graf Waldersee</i> =Hamburg:	
A. T. Morse & Co.....	14,000
AUG. 31.—By the <i>Canadian</i> =Liverpool:	
Robinson & Tallman.....	45,000
AUG. 31.—By the <i>Campania</i> =Liverpool:	
Reimers & Co.....	48,000
Crude Rubber Co.....	11,500 59,500
SEPT. 3.—By the <i>Vaderland</i> =Antwerp:	
George A. Alden & Co.....	50,000
Crude Rubber Co.....	54,000
Robinson & Tallman.....	12,000 116,000
SEPT. 3.—By the <i>Patria</i> =Lisbon:	
Robinson & Tallman.....	12,000
Reimers & Co.....	11,000 23,000
SEPT. 4.—By the <i>Majestic</i> =Liverpool:	
George A. Alden & Co.....	11,000
Crude Rubber Co.....	11,500
Livesey & Co.....	4,500
Reimers & Co.....	2,500 28,500
SEPT. 7.—By the <i>Philadelphia</i> =Southampton:	
Reimers & Co.....	9,000
SEPT. 9.—By the <i>Umbria</i> =Liverpool:	
Robinson & Tallman.....	25,000
George A. Alden & Co.....	20,500
Crude Rubber Co.....	43,000 94,500
SEPT. 10.—By the <i>Kensington</i> =Antwerp:	
George A. Alden & Co.....	295,000
Crude Rubber Co.....	77,000
Reimers & Co.....	52,000
A. T. Morse & Co.....	43,000
Joseph Cantor.....	11,500 478,500
SEPT. 12.—By the <i>Pennsylvania</i> =Hamburg:	
Livesey & Co.....	17,000
SEPT. 14.—By the <i>Lucania</i> =Liverpool:	
George A. Alden & Co.....	11,500
Crude Rubber Co.....	11,500
Livesey & Co.....	11,500
Wm. Wright & Co.....	8,500 43,000
SEPT. 16.—By the <i>Zeland</i> =Antwerp:	
George A. Alden & Co.....	40,000
Reimers & Co.....	23,000 62,000

AFRICANS—Continued.

SEPT. 20.—By the <i>Teutonic</i> =Liverpool:	
George A. Alden & Co.....	16,000
Crude Rubber Co.....	7,500
Livesey & Co.....	9,000 32,500
SEPT. 20.—By the <i>Pretoria</i> =Hamburg:	
Reimers & Co.....	35,000
Livesey & Co.....	4,500
George A. Alden & Co.....	4,000 43,500
SEPT. 21.—By the <i>Peninsular</i> =Lisbon:	
Robinson & Tallman.....	14,000
SEPT. 23.—By the <i>Georgian</i> =Liverpool:	
Crude Rubber Co.....	78,000
George A. Alden & Co.....	4,000
Livesey & Co.....	5,500 123,500

EAST INDIAN.

AUG. 31.—By the <i>St. Louis</i> =Southampton:	POUNDS.
Reimers & Co.....	9,000
SEPT. 3.—By the <i>Menantie</i> =Singapore:	
Livesey & Co.....	12,000
SEPT. 7.—By the <i>Philadelphia</i> =Southampton:	
Reimers & Co.....	4,500
SEPT. 10.—By the <i>Marquette</i> =London:	
Reimers & Co.....	14,000
SEPT. 12.—By the <i>Indranti</i> =Singapore:	
Reimers & Co.....	36,000
William Wright & Co.....	29,000
Livesey & Co.....	11,500
D. P. Cruikshank.....	11,500 79,000
SEPT. 20.—By the <i>Lowther Castle</i> =Singapore:	
George A. Alden & Co.....	11,600
SEPT. 21.—By the <i>St. Louis</i> =Southampton:	
Reimers & Co.....	5,500

PONTIANAK.

SEPT. 3.—By the <i>Menantie</i> =Singapore:	
Reimers & Co.....	425,000
William Wright & Co.....	110,000
R. Brauss & Co.....	12,000 547,000
SEPT. 12.—By the <i>Indranti</i> =Singapore:	
Reimers & Co.....	510,000
William Wright & Co.....	115,000
R. Brauss & Co.....	90,000 720,000
SEPT. 20.—By the <i>Lowther Castle</i> =Singapore:	
George A. Alden & Co.....	225,000

GUTTA-PERCHA AND BALATA.

AUG. 26.—By the <i>Mesaba</i> =London:	POUNDS.
Spaulding Manufacturing Co.....	7,000
AUG. 29.—By the <i>Graf Waldersee</i> =Hamburg:	
Robert Soltau & Co.....	7,500
Kramisch & Co.....	2,500
George A. Alden & Co.....	1,000 11,000
SEPT. 12.—By the <i>Pennsylvania</i> =Hamburg:	
Robert Soltau & Co.....	5,000

BALATA.

SEPT. 13.—By the <i>Prins Fredk. Hendrik</i> =Surinam:	
George A. Alden & Co.....	1,000
Middleton & Co.....	1,000 2,000

CUSTOM HOUSE FIGURES.

PORT OF NEW YORK—AUGUST.

Imports:	POUNDS.	VALU.
India-rubber.....	2,062,121	\$ 968,660
Gutta-percha.....	19,062	22,708
Gutta-jelatang (Pontianak)...	1,480,368	49,596
Total.....	3,561,551	\$1,038,964
Exports:	POUNDS.	VALU.
India-rubber.....	225,400	\$161,521
Reclaimed rubber.....	140,763	21,729
Rubber Scrap Imported.....	1,846,263	\$129,697

BOSTON ARRIVALS.

AUG. 1.—By the <i>Ivernia</i> =Liverpool:	POUNDS.
Reimers & Co.—African.....	24,477
Livesey & Co.—African.....	12,274
George A. Alden & Co.—Caucho.....	11,222 48,073
AUG. 5.—By the <i>Sachem</i> =Liverpool:	
Crude Rubber Co.—Caucho.....	8,165
AUG. 12.—By the <i>Michigan</i> =Liverpool:	
George A. Alden & Co.—African.....	8,169
Livesey & Co.—African.....	2,868 11,037
AUG. 20.—By the <i>Winstredian</i> =Liverpool:	
Reimers & Co.—African.....	6,421
AUG. 23.—By the <i>Turcoman</i> =Liverpool:	
Livesey & Co.—African.....	11,190
AUG. 25.—By the <i>Sagamore</i> =Liverpool:	
Reimers & Co.—African.....	2,616
AUG. 28.—By the <i>Herman Winter</i> =New York:	
Reimers & Co.—African.....	19,297
[Arrived at New York from Hamburg, by the <i>Patriota</i> , August 23.]	
AUG. 30.—By the <i>Ultima</i> =Liverpool:	
George A. Alden & Co.—African.....	9,960
Total.....	116,759

[Value, \$52,749]

GUTTA-PERCHA.

AUG. 5.—By the <i>Bostonian</i> =London:	
George A. Alden & Co.....	552
AUG. 6.—By the <i>Devonian</i> =Liverpool:	
George A. Alden & Co.....	6,068
AUG. 10.—By the <i>Saxonia</i> =Liverpool:	
George A. Alden & Co.....	220
AUG. 20.—By the <i>Conservatio Carboni</i> =Hamburg:	
George A. Alden & Co.....	909
AUG. 25.—By the <i>Virginian</i> =London:	
C. H. Arnold & Co.....	4,080
Total.....	12,439

[Value, \$267.]

AUGUST EXPORTS OF INDIA-RUBBER FROM PARA.

IN KILOGRAMS. 1000 KILOGRAMS=2204.6 POUNDS.

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL.
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Frank da Costa & Co.....	29,102	8,336	73,877	—	111,315	69,872	8,578	44,428	600	123,478	234,793
Adelbert H. Alden.....	21,350	4,720	75,343	5,212	106,625	53,860	10,630	20,680	—	85,170	191,795
Emok, Frösse & Co.....	20,060	6,290	27,940	—	54,290	63,240	12,920	15,620	—	91,780	146,070
Neale & Staats.....	—	—	—	—	—	25,229	3,103	12,540	—	40,872	40,872
Denis Crouan & Co.....	—	—	—	—	—	15,980	5,440	18,410	—	39,830	39,830
The Sears Paré Rubber Co.....	17,097	2,550	6,576	—	26,223	—	—	—	—	—	26,223
Kanthack & Co.....	—	—	—	—	—	5,735	384	1,050	—	7,169	7,169
Rudolf Zietz.....	3,840	2,080	—	—	5,920	—	—	1,500	—	1,500	5,920
Sundry small shippers.....	—	—	—	—	—	—	—	—	—	—	1,500
Direct from Iquitos.....	—	—	—	—	—	14,360	810	2,677	82,392	100,239	100,239
Direct from Itacoatiara.....	—	—	—	—	—	427	—	370	—	797	797
Direct from Manaus.....	191,888	31,137	27,596	7,318	257,939	179,271	36,210	25,715	13,454	254,650	512,589
Total for August.....	281,337	55,113	211,332	12,530	562,312	427,974	78,075	142,990	96,446	745,485	1,307,797
Total for July.....	53,865	12,211	52,243	4,384	123,153	475,196	85,135	258,604	138,275	957,210	1,080,363
January-June.....	4,868,612	1,131,774	2,401,598	1,111,084	9,513,068	3,353,916	732,072	1,408,662	1,980,886	7,475,536	16,988,604
Total for 1901.....	5,203,814	1,199,098	2,665,173	1,128,448	10,196,533	4,257,086	895,282	1,810,256	2,215,607	9,178,231	19,376,764

CABLE ADDRESS,
"GUTTAPERCH, TORONTO."



H. D. WARREN, PRES. & TREAS.
C. N. CANDEE, SECY.

CODES:

A. 1.
A.B.C. 4TH ED.
DIRECTOR,
LIEBER'S,
WESTERN UNION,
PRIVATE.

Rubber Belting Packings, Hose and Mechanical Rubber Goods

SOLE MANUFACTURERS IN
CANADA OF

"Kelly-Springfield" Solid Rubber Carriage Tires,
"Maltese Cross" Carbolized Rubber Fire Hose,
"Eureka," "Paragon" and other High Grades Cotton Fire Hose.

"Maltese Cross" and "Lion" Brands Rubber Boots and Shoes.

THE GUTTA PERCHA & RUBBER MFG. CO.

OF TORONTO, LIMITED.

49, 61 & 63 WEST FRONT STREET, TORONTO, CANADA.

Mention The India Rubber World when you write.

- - THE - -

GRANBY RUBBER CO.

HIGHEST GRADE

RUBBER BOOTS, SHOES, AND CLOTHING.

Factories: GRANBY, QUEBEC.

S. H. C. MINER, President,
J. H. McKECHNIE, Gen'l Mgr.

Mention The India Rubber World when you write.

THE CANADIAN RUBBER COMPANY OF MONTREAL.

CAPITAL - - \$1,500,000.

OFFICES AND WAREHOUSES:

333 ST. PAUL STREET.

MONTREAL, CANADA.

- - - Manufacturers of - - -

Rubber Boots and Shoes, Belting,
Packing, Hose, Carriage Cloth,
Wringer Rolls, Etc.

Mention The India Rubber World when you write.



Jenkins Bros.' Valves

are manufactured of the best steam metal, and are fully guaranteed. Why experiment with cheap valves? If you want the **BEST** ask your dealer for valves manufactured by Jenkins Brothers. Remember all genuine are stamped with Trade Mark like cut.

JENKINS BROTHERS, New York, Philadelphia, Chicago, Boston.
Mention The India Rubber World when you write.

Dixon's Silica-Graphite Paint

Roofs and iron work properly painted have not required repainting in ten to twenty years. Time only can prove the value of a paint, and Dixon's Silica-Graphite Paint is the **ONLY** graphite paint with a satisfactory time record.

For convincing evidence, address

JOSEPH DIXON CRUCIBLE CO., Jersey City, N. J.

Mention The India Rubber World when you write.

THE GUTTA PERCHA & RUBBER MFG. CO.

ESTABLISHED 1855.

MANUFACTURERS OF

Rubber Belting, Packing, Hose, Mats, Matting

AND

MECHANICAL RUBBER GOODS OF EVERY KIND.



WAREROOMS:

Nos. 126-128 Duane Street,
NEW YORK.

BRANCH STORES:

90-98 Lake St., CHICAGO.

71 Pearl St., BOSTON.

221 Chestnut St., PHILADELPHIA.

30 & 32 Fremont St., SAN FRANCISCO.

A. SPADONE, Pres.

H. E. SPADONE, Vice-Pres.

Mention The India Rubber World when you write

MATTHEW HAWES, Treas.

Looks and Wear

These tests of *good rubbers*

this year

will *increase the fame of*

Hood Rubbers

TYRIAN **DRUGGISTS'** **RUBBER GOODS.**

Fountain and Bu'b Syringes,
Water Bottles, Atomizers,
Air Cushions, Urinals, Nipples,
Nursing Bottles, etc., etc.

MOULD WORK A SPECIALTY.

Our Goods are Warranted.

TYER RUBBER COMPANY, Andover, Mass.

Mention The India Rubber World when you write.

